## © ELECTRIC TODL HEADQUARTERS"



1/4" SHORTY Drill (ball-bearing equipped)

Ability to work "around corners" and in small openings has popu larized this drill in many production and assembly operations. Small, round motor housing requires no extra handle.

| Capacity. |  |
| :---: | :---: |
| Speed: No-load................ 2500 R.P.M.; | Full load..................... 1600 R.P.M |
| Optional No-load Speeds (no extra) | or 5000 R.P.M |
| Overall length: Chuck spindle end..41/2"; | Lengthwise.............................. $8^{3}$ |
| Weight: Net |  |
| Price, Paddle Switch Unit complete, sp | ge (Cat. No. 287) |
| Special Order:-1/4" SHORTY with to (Cat. No. 298) | switch in end cap |

## 1/4" JUNIOR ELECTRIC DRILL



Designed for intermittent service in shops and for maintenance work. "Compo" oilless bearings for smooth operation. Its powerful motor will handle hundreds of "pick-up" drilling jobs in metal and wood. An ideal drill for tool kit in maintenance work, plumbing, automotive repair, electrical, carpentry and cabinet work and on the work bench. Has thumb operated slide switch.

Capacity: In steel. $\qquad$ ..up to $1 / 4^{\prime \prime}$; Speed: No load 2000 R.P.M.;
Weight: Net. $\qquad$ ..... $33 / 4 \mathrm{lbs}$.

In hardwood..
...up to $1 / 2{ }^{\prime \prime}$ ..103/4"
Price, complete, specify voltage (Cat. No. 30). Shipping Weight 1400 R.P.M
$\qquad$ $\$ 28.00$

## THE 1/4" HOLGUN ELECTRIC DRILL



A PERFECTLY proportioned "Handful of Power" of surprising compactness and smooth lines. "Pistol Grip and Trigger Switch," special ball spindle bearing, splined gear mounting, screened air inlets and full ball-bearing equipped. Available in eight spindle speeds from high torque at 500 R.P.M. to high speed at 5,000 R.P.M. Choose Standard Models for regular production; Heavy-Duty Models for severe constant service schedules; low speed units for hard alloys.

| $1 / 4^{\prime \prime}$ Standard HOLGUN | Standard Speed Model | Low Speed Model |
| :---: | :---: | :---: |
| Capacity in steel. | up to 1/4" |  |
| No-load Speed. | 1700 R.P.M.* | 500 R.P.M. $\dagger$ |
| Weight: Net. | 3 lbs . | $31 / 4 \mathrm{lbs}$. |
| Shipping | $41 / 1 \mathrm{lbs}$ | $41 / 2 \mathrm{lbs}$. |
| Overall length. | 63 " ${ }^{\prime \prime}$ | $71 /{ }^{\prime \prime}$ |
| Spindle Offset. |  |  |
| Cat No.. | 345 | 346 |
| Price, complete, spe | \$38.00 | \$44.00 |
| 1/4" Heavy-Duty HOLGUN |  |  |
| Capacity in stee | up to $1 / 4^{\prime \prime}$ | up to $1 / 4$ |
| No-load Speed. | 1700 R.P.M.* | 500 R.P.M. $\dagger$ |
| Weight: Net.. | $31 / 2 \mathrm{lbs}$. | $3{ }^{38} \mathrm{l}$ lbs. |
| Shipping. | $51 / 21$ \% | $5838{ }^{3}$ |
| Catalog No..... |  |  |
| Price, complete, specify voltage | \$42.00 | \$48.00 |
| $1 / 4^{\prime \prime}$ Heavy-Duty HOLGUN <br> (SIDE HANDLE MODEL-NOT ILLUSTRATED) |  |  |
| Capacity in steel....................................... | up to $1 /{ }^{\prime \prime}$ | up to |
| No-load Speed | 1700 R.P.M | 500 R.P.M. $\dagger$ |
| Weight: Net. | 4 lbs . | $41 / 4 \mathrm{lbs}$. |
| Shipping | 6 lbs . |  |
| Overall length... | $81 / 8^{\prime \prime}$ | 88462 |
| Catalog No............................ |  | \$48.00 |
| Price, complete, specify voltage.... | \$42.00 | \$48.00 |
| *Optional speeds (no extra cost)-2500, 350 †Optional speeds (no extra cost)-750, 1000 | 00 or 5000 R.P. |  |

## 1/4" STANDARD DRILL <br> BALL-BEARING EQUIPPED)



The popular $1 / 4$ " Standard Drill is supplied in very sturdy aluminum alloy housings. This feature adds strength and ability to stand abuse, while retaining light weight-to-power ratio. Chuck spindle bearing is double grease sealed with inner and outer races locked.

Capacity in steel
up to $1 / 4 "$ Speed: No-load (Std.)..... 2000 R.P.M. Optional No-load Speeds 3500 R.P.M. (at no extra cost)........ 5000 R.P.M. Price, complete Net Weight $51 / 4 \mathrm{lbs}$. Price, complete 500 R.P.M. Shipping Weight.. $\qquad$ . $71 / 2$ lbs. . $\$ 44.00$ Equipped with No. 24322 Chuck Protector

## 1/4" HEAVY DUTY DRILL



A sturdy, perfectly balanced drill for constant service on production and heavy duty maintenance work. Especially suited to driving Carbon Cleaning Tools. duty maintenance work. Especially suited to driving Carbon Cleaning Tools.
Armature and chuck mounted on ball bearings. Automatic release switch Armature and chuck mounted on
with thumb latch for optional use.

Capacity: In steel...................... to 1/n $^{\prime \prime}$;
Speed: No load............... 2000 R.P.M. In hardwood..............................1/2" 1280 R.P.

Overall length.................................................................................... 50.1 "
Price, with geared chuck and -(Cat. No. 32)....................................... $\$ 50.00$
Price, with Portomatic keyless chuck-(Cat. No. 386)......................................... $\$ 53.00$

## 5/16" HEAVY DUTY ELECTRIC DRILL

## (BALL-BEARING EOUIPPED)

(SEE ILLUSTRATION OF $1 / 4$ " HEAVY DUTY)
Designed for industrial production service on cabinet and body assembly, and especially suited to lead hole drilling on screwdriving operations. Automatic release switch equipped with thumb latch for optional use. Armature and chuck spindle mounted on ball bearings.
$\begin{array}{lll}\text { Capacity: In steel......................... to }{ }^{5 / 16^{\prime \prime} ;} & \text { In hardwood......................................" } \\ \text { Speed: } \\ \text { No load............. } 1400 \text { R.P.M.; } & \text { Full load ................. } 920 \text { R.P.M. }\end{array}$
 Overall length......................................................................................................................... $123 / \mathrm{B}^{3 /}$
Price, with geared chuck and key (Cat. No. 360)......................................... $\$ 52.00$ Price, with Portomatic keyless chuck (Cat. No. 387).
. $\$ 55.00$
*Special Speed- 1000 R.P.M.- $\$ 2.50$ extra.

## 3/8" STANDARD BALL-BEARING DRILL


 Optional No-load Speeds 350 , 500, or Overall length................................ $135 / 8^{\prime \prime}$ (at no extra cost)........
Price, complete, specify voltage (Cat. No. 490 )........................................... $\$ 52.00$ Price, complete, specify voltage (Cat. No. 490)......................................... $\$ 52.00$
This Drill can be furnished with $5 / 16^{\prime \prime}$ geared chuck and no-load speed of 1100 R.P.M. at no extra cost.

STANDARI EQUIPMENT, Drills shown above-3-conductor cable and plug; automatic-release trigger switch and locking pin (except $1 / 4$ " Junior and Shorty); 3 jaw Jacobs threaded chuck and key; Universal motor, operating on A.C. or D.C.
STANDARI VOLTAGE for Drills shown above- 110 or 220 . On special order 125 or 240 volts. 1/4" Standard Drill only, also 32 volts from stock.
IDRILL CAPACITIES in hardwood are up to twice drill capacity in steel.


SEE ILLUSTRATION OF $1 / 2^{\prime \prime}$ STANDARD ABOVE
Designed for industrial use in plants where production drilling of $3 / 8$ " holes at high speed is required. Design and construction features same as for Standard Drill.

SPECIFICATIONS

| Capacity, in | up to 3 " ${ }^{\prime \prime}$ |
| :---: | :---: |
| No-load Speed. | 900 R.P.M. |
| Weight: Net. | 916 lbs. |
| Shipping. | 1234 lbs . |
| Overall length.. | $131 / 2{ }^{\prime \prime}$ |
| Cat. No. (specify voltage). | 362 |
| Price, complete.. | \$58.00 |



SPECIFICATIONS
Capacity, in steel.... No-load Speed
Weight: Net.
Shipping
Overall length
Cat. No. (specify voltage)
Price, complete
up to $1 / 2^{\prime \prime}$
375 R.P.M.
$91 / 8 \mathrm{lbs}$.
$113 / 4$ lbs.
$141^{\prime \prime}{ }^{\prime \prime}$
$\$ 45.00$


## 1/2" STANDARD Ball-Bearing DRILL

The most popular general purpose Portable Electric Drill. You'll note its perfect operating balance instantly; also the close-coupled construction, minimum spindle offset and horizontal spade handleall so important when drilling in confined space.

SPECIFICATIONS

| Capacity, in steel | up to $1 / 2^{\prime \prime}$ |
| :---: | :---: |
| No-load Speed. | 400 R.P.M. |
| Weight: Net. | $93 / 4 \mathrm{lbs}$. |
| Shipping..................... | 13 lbs . |
| Overall length. | $133 / 4{ }^{\prime \prime}$ |
| Cat. No. (specify voltage). | 361 |
| Price, complete. | \$58.00 |

5/8" STANDARD BALL-BEARING DRILL


For garages, body shops, maintenance crews and general service shop work. Jacobs geared chuck and key. Correct spindle speed for carbon bits, augers, Hole Saws, cylinder hones, hard metals. Heavy'Duty bearing construction, ample power, light weight.

## SPECIFICATIONS

| acity, in steel................... | $5 / 3^{\prime \prime}$ to $5 / 8$ " |
| :---: | :---: |
| No-load speed.................................. | 300 R.P.M |
| Weight: Net. | 17 lbs . |
| Shipping | $213 / 4 \mathrm{lbs}$. |
| Overall length. | $18^{\prime \prime}$ |
| Cat. No. (specify voltage)......... | 238 |
| Price, complete... | \$72.00 |

3/4" STANDARD BALL-BEARING DRILL


A powerful tool, with triple gear reduction for low spindle speed. Chuck operates on Timken tapered roller bearings.

SIPECIFICATIONS
Capacity, in steel.
${ }^{3} / 16^{\prime \prime}$ to $3 / 4^{\prime \prime}$
No-load Speed
........................................... 250 R.P.M.
Weight: Net. Shipping.

191/4 lbs.
Overall length.
$251 \% \mathrm{lbs}$.
$1834^{\prime \prime}$
Cat. No. (specify voltage)
239
$\$ 80.00$

STANDARD EQUIPMENT. All Drills shown above- 3 conductor cable and plug; automatic-release trigger switch and locking pin; 3 jaw Jacobs threaded chuck and key; Universal motor, operating on A.C. or D.C
STANDARD VOLTAGE for all Drills- 110 or 220 . On special order 125 or 240 volts. $1 / 2^{\prime \prime}$ Standard Drill only, also 32 volts from stock.
DRILL CAPACITIES in hardwood are up to twice drill capacity in steel

## "•ELECTRIC TDOL, HEADQUARTEIBS"



Designed for better balance, greater efficiency and smoother operation on heavy-duty service. Ball bearings on chuck spindle absorb both side and end thrust. Armature shaft mounted on ball bearings.

Optional-Nos. 1 or 2 Morse Taper Socket instead of chuck.
Price, complete, specify voltage-(Cat. No. 40) $\qquad$ $\$ 77.00$
${ }^{*}$ Special Speeds: 750 or 900 R.P.M.

## 5/8" HEAVY DUTY DRILL

Equipped with roller spindle bearing, Jacobs geared chuck and key.

Optional-No. 2 Morse Taper Socket instead of chuck.
Price, complete, specify voltage-(Cat. No. 42).
$\$ 95.00$

## 3/4" HEAVY DUTY DRILL

Taper-roller spindle bearing, extra long switch handle and pipe handle, specia safety switch, Jacobs geared chuck and key.

Price, complete, specify voltage-(Cat. No. 45)
${ }^{*}$ Special Speeds: 275,600 or 900 R.P.M $\qquad$ $\$ 105.00$

## 1" HEAVY DUTY DRILL

No. 3 Morse taper socket. Drilling in steel, $1^{\prime \prime}$; light reaming, $3 / 4{ }^{\prime \prime}$ heavy reaming, $5 / 8^{\prime \prime}$.

No-load Speed.
Net weight....
rice, complete, specify voltage-(Cat. No. 47 )
350 R.P.M.
$\underset{201}{\substack{\prime \prime}}$
Special Speeds-275, 600 or 900 R.P.M $\qquad$ \$120.00

## 11/4" HEAVY DUTY DRILL

A new unit of increased power, with extra long safety switch and pipe handles. A new unit of increased power, with extra long safety switeh and pipe handes, Drilling capacity in steel, up to $1 / 4^{\prime \prime}$. (With 3-2 or 3-1 Reducing Sleeve Drilling capacity, in steel, up to
range is extended down to $1 / \delta^{\prime \prime}$ ).
Reaming capacity, light, up to $1^{n}$; heavy, up to $3 / 4^{\prime \prime}$
No-load Speed (standard)........... 250 R.P.M.*
Net weight................................
32 lbs.
Net weight....
Overall length
............................................... 201/2"
..$\$ 135.00$
Price, complete, specify voltage-(Cat. No. 494$)$
${ }^{\text {S Special No-load Speeds: }} 350,600,900$ R.P.M. $\qquad$
1....... $\$ 5.00$ extra Reversing switch for above drills... .. $\$ 10.00$ extra

Standard Voltage on above drills-110 or 220 . On special order 125 or 240 volts also available. Universal Motors for A.C. or D.C.

> Capacity, in steel.
> No-load Speed
> Overall length
> 375 R.P.M.*
> Overall length
> $27 \frac{1}{21}$ lbs.
> Optional-Nos. 2 or 3 Morse Taper Socket instead of chuck.

> Capacity, in steel.
> 5/6" to 5/8"
> No-load Speed..
> 450 R.P.M.
> Net weight.....
> $\begin{gathered}211 / 4 \mathrm{lbs} . \\ 20^{\prime \prime}\end{gathered}$

> Capacity, in steel.
> No-load Speed.......................................... 500 R.P. $\mathrm{M}^{\prime \prime}$
> Net weight....
> 00 R.P.M.*
> Overall length
> 17 lbs.

Quickly adapt portable drills to drill press operations; for heavy duty and accurate work. Handle leverage permits tremendous pressure; bracket adjustable for height and ateral position; one bracket fits several tools and no adaptors are required.

SIZE 20 DRILL STAND-Fits all endhandle Drills from $14^{\prime \prime}$ Junior to $3 / 8^{\prime \prime}$ Standard; the SCRUGUN, TAPGUN, No. 14 and No. 18 Screw-Drivers and $1 / 4^{\prime \prime}$ Tapper. Maximum feed is $2^{\prime \prime}$; from C/L Bit to C/L Column is $51 / 4^{\prime \prime}$
CAT. No. 22148 BENCH DRILLSTAND Net Weight 16 lbs ; shipping $191 / 2 \mathrm{lbs}$. Price.......................................................... $\$ 19.00$

SIZE 40 DRILLSTANI-Fits $3 / 8^{\prime \prime}$ HeavyDuty, $1 / 2^{\prime \prime}$ Junior, $1 / 2^{\prime \prime}$ Utility, $1 / 2^{\prime \prime}$ Standard Drills. Maximum feed is $4^{\prime \prime}$; from C/L Bit to $\mathrm{C} / \mathrm{L}$ Column is $6^{\prime \prime}$.
CAT. No. 22145 BENCH DRILL STAND -Net Weight 30 lbs.; shipping 37 lbs. Price........................................................826.00

SITE 60 DRILL STAND-Fits all sidehandle Drills from $1 \frac{1}{2}$ Heavy-Duty to the $1^{\prime \prime}$ Heavy-Duty. Maximum feed is $4^{\prime \prime}$; from C/L Bit to C/L Column is $8^{\prime \prime}$. CAT. No. 13857 BENCH DRILLSTAND Net Weight 59 lbs ; shipping 69 lbs . Price........................................................ 840.00

SIZE 80 DRILL STAND-Fits the $11 /{ }^{\prime \prime}$ Heavy-Duty Drill only. Maximum feed is $4^{\prime \prime}$; from $\mathrm{C} / \mathrm{L}$ Bit to $\mathrm{C} / \mathrm{L}$ Column is $12^{\prime \prime}$. is $4^{\prime \prime}$; from C/L Bit to C/L Column is $12^{\prime \prime}$. -Net Weight 73 lbs :; shipping 90 lbs -Net Weight 73 lbs.; shipping 90 lbs.


No. 23046 HORIZONTAL DRILL S'TANDS for current models of $14^{\prime \prime}$ Standard (End Handle). $1_{4}$ " H.D., ${ }^{5} 16^{\prime \prime}$ Utility, $5 / 6^{\prime \prime}$ H.D., 3/8" Standard, 3/8" Utility, $1 / 2$ " End Handle Drills, and Nos. 18 and 16 Gauge Shears............................................ \$4.25 No. 8169 HORIZONTAL DRILL STAND for 1/4" Junior Drills.................................................... $\$ 3.00$

## CHUCKS

Replacement geared chucks and chuck keys are available for all sizes and types of Electric Drills. Most $1 / 4^{n}$ to $3 / 8^{n}$ Drills may be equipped with Portomatic Keyless Chucks at small cost Eliminate lost time and damage from lost keys.

CHUCKS ON MORSE TAPER ARBORS

$5 / 8$ " and $34^{\prime \prime}$ capacity geared chucks on proper size Morse Taper Arbors can be furnished for Drills equipped with M. T. Sockets.

## FEED SCREWS

For applying heavy, steady pressure when drilling in awkward places. Adapted to $1 / 2^{\prime \prime}$ Heavy Duty and larger Drills.

AUXILIARY SIDE HANDLE

For end handle Drills and Screw Drivers, to provide accurate control and greater feed pressure.

RIGHT ANGLE DRILLING ATTACHMENT
Enables operator to reach out-of-the-way places in work on joists, etc. A handy attachment for all types of contracting jobs and electrical installations. Equipped with 3 -jaw Geared Chuck, $1 / 2^{\prime \prime}$ capacity.
No. 23574 Right Angle Attachment for $1 / 2^{\prime \prime}$ Junior (B)
No. 17819 Right Angle Attachment for $1 / 2^{\prime \prime}$ Standard and $1 / 2^{\prime \prime}$ Utility.. 38.00 No. 17820 Right Angle Attachment for $1 / 2^{\prime \prime}$ H.D. (A and B) and 5/8" Standard.

## WHEEL ARBORS

Adapt $1 / 4$ " and $1 / 2^{\prime \prime}$ Drills to light grinding and wire brushing, by holding wheels in chuck of drill. Body of arbor is $1 / 2^{\prime \prime}$ diameter and will take $3^{\prime \prime}$ and $4^{\prime \prime}$ wheels.
No. 3071 1/4" Drill Arbor ( $1 / 2^{\prime \prime}$ diam.; $1 / 4^{\prime \prime}$ " shank).
$\$ .85$
1.75
No. 8449 1/2" Drill Arbor ( $1 / 2^{\prime \prime}$ diam.; $1 / 2^{\prime \prime}$ shank)..

## SANDING PAD ARBOR

No. 23041 Arbor for $5^{\prime \prime}$ Sanding Pad; fits $1 / 4^{\prime \prime}$ H.D., $5 / 6^{\prime \prime}$ and $3 / 8^{\prime \prime}$ Drills ( $5 / 8^{\prime \prime}-11$ thr., $1 / 4^{\prime \prime}$ shank).
"ELECTIBIC TDOL HEAIDQUARTEIRS"

## HOLE SAWS

Cut clean, round holes in steel, cast iron, sheet metal wood or any material a hack saw will cut. Available in three types: fine-tooth for sheet metal, steel and all thin materials; coarse-tooth for cast iron, wood, fibre and all thick materials; both of highest quality tungsten steel, and a new HIGH-SPEED Hole Saw for hard alloys and production work.

| SAW <br> Size <br> Outside <br> Diam. | Fine- <br> Tooth SAW Cat. No. | CoarseTooth SAW Cat. No. | Price Each (SAW ONLY WITHOUT Mandrel) | High Sipeed Saw |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Cat. No. | Price |
| $5 / 8 \prime \prime$ | 23051 |  | \$1.65** |  |  |
| $3{ }^{\prime \prime \prime}$ | $16882 \dagger$ | $14906 \dagger$ | . 55 | $21747 \dagger$ | \$1.28 |
| 7/8" | $16883 \dagger$ | $14908 \dagger$ | . 55 | $21748 \dagger$ | 1.28 |
| 13 , 16 " | $21382 \dagger$ |  | . 55 | $21749 \dagger$ | 1.28 |
| $1{ }^{\prime \prime}$ | $16884 \dagger$ | $14910 \dagger$ | . 55 | $21771 \dagger$ | 1.28 |
| 11 /6" | $21875 \dagger$ | $22953 \dagger$ | . 72 | $22809 \dagger$ | 1.28 |
| $11 /{ }^{\prime \prime}$ | $16885 \dagger$ | $14912 \dagger$ | . 72 | $21772 \dagger$ | 1.28 |
| 13 价" | $17678{ }^{+}$ | $17679 \dagger$ | . 72 | $21773 \dagger$ | 1.28 |
| $114^{\prime \prime}$ | 16886*** | $14911{ }^{*}$ | . 72 | $21781 *$ | 1.28 |
| $13 /{ }^{\prime \prime}$ | 16887* | 14913** | . 72 | 21782* | 1.28 |
| $11 /{ }^{\prime \prime}$ | 16888** | 14914** | . 72 | $21783^{*}$ | 1.28 |
| $15 /{ }^{\prime \prime}$ | 16889** | 14915* | . 85 | 21784** | 1.28 |
| $13 / 4 \prime$ | 16890** | 14916** | . 85 | 21785 * | 1.70 |
| 17/8" | 16891** | 14917* | . 85 | $2178{ }^{*}$ | 1.70 |
| $2^{\prime \prime}$ | $16892 \ddagger$ | $14918 \ddagger$ | 1.02 | $21787 \ddagger$ | 1.70 |
| 21.16 | $16893 \ddagger$ | $14919 \ddagger$ | 1.02 | $21788 \ddagger$ | 2.26 |
| $218 \prime \prime$ | $16894 \ddagger$ | $14920 \ddagger$ | 1.02 | $21789 \ddagger$ | 2.26 |
| $21 /{ }^{\prime \prime}$ | $16895 \ddagger$ | $14922 \ddagger$ | 1.20 | $21790{ }_{+}^{+}$ | 2.26 |
| 23/8" | 16896 | $14921 \ddagger$ | 1.20 | $21791 \ddagger$ | 2.26 |
| 21/2" | $16897 \ddagger$ | $14923 \ddagger$ | 1.20 | $21792 \ddagger$ | 2.26 |
| $25 / 8$ " | $16898 \ddagger$ | $14924 \ddagger$ | 1.28 | $21793 \ddagger$ | 2.26 |
| $23 / 4 \prime$ | $16899 \ddagger$ | $14925 \ddagger$ | 1.28 | $21794+$ | 2.26 |
| $27 /{ }^{\prime \prime}$ | $16900 \ddagger$ | $14927 \ddagger$ | 1.28 | $21795 \ddagger$ | 2.26 |
| $3^{\prime \prime \prime}$ | $16901 \ddagger$ | $14926 \ddagger$ | 1.40 | $21796 \ddagger$ | 2.26 |
| $31 /{ }^{\prime \prime}$ | $16902 \ddagger$ | 14930 | 1.40 | $21797 \ddagger$ | 2.26 |
| $31 / 4 \prime \prime$ | $16903 \ddagger$ | $14929 \ddagger$ | 1.40 | $21798 \ddagger$ | 2.26 |
| $33 / 8$ " |  | $24172 \ddagger$ | 1.40 |  |  |
| $31 / 2 \prime$ | $16904 \ddagger$ | $14928 \ddagger$ | 1.40 | $21799 \ddagger$ | 2.26 |
| 35/8" |  | $24173 \ddagger$ | 1.70 |  |  |
| $33^{\prime \prime}{ }^{\prime \prime}$ |  | $24174 \ddagger$ | 1.70 |  |  |
| 37/8" |  | $24175 \ddagger$ | 1.70 |  |  |
| $4^{\prime \prime}$ | $16905 \ddagger$ | $14932+$ | 1.70 | $21800 \ddagger$ | 3.85 |

MANDRELS FOR $1 / 4 "$ " $5 / 6_{6}^{\prime \prime}$ AND $3 / 8^{\prime \prime}$ DRILLS
$\dagger 22181$ Mandrel with Pilot Drill (for $3 / 4$ " to $1^{3} 16^{\prime \prime}$ Saws).... $\$ 1.65$
*22182 Mandrel with Pilot Drill (for $11 /{ }^{\prime \prime}$ to $11 /{ }^{\prime \prime}$ Saws). 1.65
$\qquad$ 1.70

22192 1/4" Pilot Drill, only for above mandrels .40
30
23050 3/16" Pilot Drill (for $5 / 8^{\prime \prime}$ Hole Saw only)
**No. 23051 Hole Saw has a built-in Mandrel; no separate Mandrel supplied.

## MANDRELS FOR $1 / 2 "$ AND LARGER DRILLS

$\dagger 14903$ Mandrel with Pilot Drill (for $3 / 4^{\prime \prime}$ to $1^{3} / 6_{6}^{\prime \prime}$ Saws).
$\qquad$
*14904 Mandrel with Pilot Drill (for $11 / 4$ " to $17 / 8^{\prime \prime}$ Saws). 1.70
$\dagger 18028$ Mandrel with Pilot Drill (for ${ }^{\prime \prime}$ to $4^{\prime \prime}$ Saws) 1.70

14935 1/4" Pilot Drill only, for above mandrels... 40

## SPECIAL HOLE-SAWS

Special Tungsten Hole Saws, with extra-coarse tooth arrangement at 50c higher than standard prices up to $17 / 8^{\prime \prime}$, and $\$ 1.00$ higher in $2^{\prime \prime}$ to $4^{\prime \prime}$ sizes. SPECIAL DEPTH HOLE SAWS-For home insulation and other uses requiring extra depth, the following special coarse-tooth Tungsten Hole Saws, with $134^{\prime \prime}$ depth-of-cut, and special Mandrel, are available.
No. 24576 2 $1 / 2$ " Special Hole Saw.
. $\$ 2.78$
No. $186353^{\prime \prime}$ Special Hole Saw.
2. 78

No. 24578 Special Mandrel with pilot drill for above Hole Saws............... 1.95
No. 24577 Pilot drill for No. 24578 Mandrel.

## 3/16" ELECTRIC TAPGUN

Fills the increasing demand for a lighter weight unit to handle portable tapping operations in small sizes on numerous assembly jobs. Has automatic reversing mecha nism which automatically backs the tap out of the threaded hole at high speed. No reversing switch is needed.

Tapping capacity: In mild steel $3 / 16^{\prime \prime}$; in cast iron 5 , n $_{6}$; in brass or aluminum $3 / 8^{\prime \prime}$.

Speed: No-load $\qquad$ .400 R.P.M.
Reversing
Reversing $\qquad$ .. 525 R.P.M.
Weight: Net...
Price, complete, specify voltage-(Cat. No. 383) $\qquad$ With No. 32376 Tap-Holding Chuck

Universal Mpecial
Universal Motor operates on A.C. or D.C.

## 1/4" TAPPER



Tapping capacity.........................3/8" in cast iron; $14^{\prime \prime}$ in steel; $1 / 2^{\prime \prime}$ in brass Speed: No-load.............................M. R. Reversing.................... 500 R.P.M Weight: Net............................ 101/2 lbs. Shipping.
Overall length.
Shipping
Price, complete, specify voltage-(Cat. No. 90).
For industrial use where production tapping must be done on pieces too large or heavy to handle in a machine tapper. Especially adapted to installation and maintenance work on pipe lines, heating and lighting systems, steel shelving, partitions, etc. Threading holes in steel, cast iron brase or aluminum Universa motor operates on A.C. or D.C

With No. 32377 Tap-Holding Chuck. $\qquad$ $.153 / 4$
$\$ 87.00$
Special Speeds-500, 700 R.P.M
Standard Voltage-110 or 220 . On special order, 125 or 240 volts. Universal Motor.

## ELECTRIC PORTO-SHEARS

The Porto-Shear will cut all types of sheet metal quickly, easily, and accurately. It is also used successfully for cutting thin sections of laminated wood and sheet plastics with slight changes in blade contours. Porto-Shears cut to small radii, and easily follows a straight or irregular pattern line-because the cutting blade is always visible. PortoShears easily cut to rated capacity in steel and galvanized iron; about one gage thinner in Monel and stainless; and $50 \%$ above rating in copper, aluminum, lead and other non-ferrous metals. Blades can be reground without special fixtures. All units are full ball-bearing equipped (except eccentric) and powered by Universal motors.


16-Gage


No. 18 GAGE PORTO-SHEAR New housings of pressed steel have reduced the diameter, overall length and weight of this unit-greatly improving the operating balance and ease of handling. The housing serves as a "selfhandle", eliminating the end handle. Power and capacity are equal to previous model.
No. 16 GAGE PORTO-SHEAR A new operating handle makes this larger, more powerful unit much easier to use. The handle contains an instantrelease trigger switch, and may be held at any position, over-top to rear-end, for best balance and control. Power and capacity same as previous model.

No. 12 GAGE PORTO-SHEAR A powerful new unit developed to shear 12-gage steel and galvanized iron. Also cuts about two gages thinner in Monel and stainless, and approximately $50 \%$ above rating in sheet copper, aluminum, lead and other non-ferrous metals. Cutting action is clean and smooth without burrs or ragged edges.

|  | No. 18 Gage No. 16 Gage No. 12 Gage |  |  |
| :---: | :---: | :---: | :---: |
|  | Porto-Shear | Porto-Shear | Porto-Shear |
| Capacity, in steel, (U. S. Std.) | 18-gage | 16-gage | 12-gage |
| Cutting Speed, (Strokes per min.).. | 2500 | 2500 | 2000 |
| Minimum Cutting Radius.. | $12^{\prime \prime}$ | $3 / 4$ " | $11 / 2^{\prime \prime}$ |
| Weight: Net. | $51 / 2 \mathrm{lbs}$. | $81 / 2 \mathrm{lbs}$. | 11 lbs . |
| Shipping | 8 lbs. | $101 / 2 \mathrm{lbs}$. | $131 / 2 \mathrm{lbs}$. |
| Overall length. | $91 / 8^{\prime \prime}$ | $121 / 8^{\prime \prime}$ | 1215/16" |
| Cat. No., (specify voltage) | 258 | 259 | 507 |
| Price, complete. | \$82.00 | \$85.00 | \$135.00 |
| Standard Voltage-110 or 220. | On special or al Motor. | $\text { der, } 125 \text { or } 2$ | 0 volts. |

## "ELECTBIC TOOL HEADQUARTERS"

## NO. 4 TORSIMETER ADJUSTABLE CLUTCH SCREWDRIVER <br> 

Pre-adjusted to correct driving torsion; insures uniform results in production screw driving. A light, compact tool for small trim work, cabinet and airplane assembly.
Specially adapted to self-threading screws in light metal
Quick-change chuck $1 / 4^{\prime \prime}$ hex. socket.
Capacity-Up to No. 4 Screws; No-load Speed, 1000 R.P.M.
No. 4 Torsimeter with paddle switch-(Cat. No. 244), specify voltage.
$\$ 80.00$
Reversing switch
Net weight, 3 lbs.; overall length, $11 \frac{1}{2}$ "; shipping weight, 4 lbs.

## No. 10 SCRUGUN

POSITIVE AND ADJUSTABLE CLUTCH SCREWDRIVERS

Extremely compact, highly versatile, surprisingly powerful; for production screwdriving in cabinet, trim, auto body and airplane assembly. Covers wide size range in machine screws, wood screws and self-tapping screws. Structural features same as HOLGUN
Capacity: Wood screws-Up to No. $10 \times 2^{\prime \prime}$; Self-tapping Screws-Up to No. 12; Machine Screws and Nuts-Up to 1/4" diameter.
Standard spindle Speed-(No-load), 750 R.P.M.
Optional Speeds-(No extra cost), $500,1000,1500$ R.P.M.
Equipped with quick-change chuck, $1 / 4^{\prime \prime}$ hex. socket.

## No. 10 POSITIVE CLUTCH SCRUGUN

Has positive-type clutch which permits free spindle to idle until bit "finds" screw slot.
Net weight, $3 \frac{1}{2} \mathrm{lbs}$; overall length, $83 / 4^{\prime \prime}$; shipping weight, $43 / 4 \mathrm{lbs}$.
Price, complete, specify voltage-(Cat. No. 402).........................................
$\$ 55.00$
No. 10 ADJUSTABLE CLUTCH SCRUGUN (ILLUSTRATED)
Automatically drives every screw to uniform depth.
Double clutch "cushions" the torque and relieves operator of any twisting motion as screw is driven home. Free spindle idles until operating pressure is applied.
Net weight, $33 / 4 \mathrm{lbs}$; overall length, $10 \frac{1}{4} \mathrm{~m}$; shipping weight, $5 \frac{1}{4} \mathrm{lbs}$.
Price, complete, specify voltage-(Cat. No. 350).
$\$ 68.00$

## No. 10 RIGHT-ANGLE SCRUGUN



By adding the advantages of the right-angle drive to the No. 10 Scrugun, "corner" work, limited clearance and other obstacles to the efficient use of the straight-drive unit are overcome. See master catalog for available heads.
Capacity: Machine screws and nuts, up to $1 / 4^{\prime \prime}$ diameter; Self-tapping screws, up to No. 12.
No-load Speed, 500 R.P.M.*

|  | $\underset{\text { Unit }}{\text { Standard }}$ | $\underset{\text { Grip }}{\text { Bonnet } \dagger}$ | Paddle $\dagger$ Switch |
| :---: | :---: | :---: | :---: |
| Weight: Net. | $41 / 2 \mathrm{lbs}$. | $51 / 4 \mathrm{lbs}$. | $51 / 4 \mathrm{lbs}$. |
| Shipping.... | 6 lbs . | 7 lbs . | 7 lbs . |
| Overall length.......... | 103/4" | 141/8" | 141/8" |
| Cat. No.. | 374 | 390 | 391 |
| Price, complete with one head - |  |  |  |
| No. 100 to 108 Heads............... | \$ 93.00 | \$ 98.00 | \$101.00 |
| No. 150 to 152 Heads. | 101.00 | 106.00 | 109.00 |
| No. 156 Head............. | 113.00 | 118.00 | 121.00 |
| Reversing Switch-Paddle Switch | and Bonnet | ip units only | \$7.50 |
| *Optional Speeds (no extra char | -350, 750 | 1000 R.P.M |  |
| $\dagger$ 'These units similar to Center-D | Scrugun. |  |  |

## No. 10 CENTER-DRIVE SCRUGUN <br> 

Ideal for operation in suspended position. Center spindle improves 'aim', bonnet grip or paddle switch arrangements eliminate handles: operates in reverse at full power when equipped with reversing switch.
Net weight, $43 / 4 \mathrm{lbs}$.; overall length, $131 / 2^{\prime \prime}$, shipping weight, 6 lbs .
Other specifications same as No. 10 Scrugun.
Price, 10 Adjustable Clutch Scrugun-with Bonnet Grip-(Cat

With Paddle Switch-(Cat. No. 381).
76.00

Price, 10 Posítive Clutch Scrugun-with Bonnet Grip-(Cat. 60.00
No. 403)................................................................................................................ 60.00
With Paddle Switch-(Cat. No. 404)............................................................................................... 60

No. 14 and No. 18 SCREW DRIVERS


Nos. 14 and 18 Screw Drivers are capable of constant production in screw driving operations in metal or wood, nut tightening, boat building, body work assembling and crating. Have ${ }^{7} 16^{\prime \prime}$ hex. socket chuck and can be equipped with reversing switch for disassembly work.
No. 30426 Auxiliary Side Handle for No. 14 Screw Drivers.
. $\$ 2.75$ extra No. 30427 Auxiliary Side Handle for No. 18 Screw Drivers.. $\$ 2.75$ extra Capacities:
Wood Scre

No. 18 "
Wood Screws.
No. 14 "
$18 \times 31 / 2^{\prime \prime}$
Self-tapping Screws.
Lag Screws................................................................. 56." Dia.
Machine Screws and Nut............................................................... $3^{\prime \prime}$ x $2^{\prime \prime}$
Standard Voltage-110 or 220 . On special order 125 or 240 volts
Standard No-load Speed 500 R.P.M. ${ }^{*}$

## No. 14 POSITIVE CLUTCH DRIVER

Pin-type clutch permits spindle to idle until bit finds screw slot. Throws out when operating pressure is released.
Net weight, $63 / 4 \mathrm{lbs}$.; overall length, $131 / 4{ }^{\prime \prime}$, shipping weight, 9 lbs.
Price, complete, specify voltage-(Cat. No. 53)
.$\$ 65.00$
${ }^{*}$ Special Speeds-750, 1000 or 1600 R.P.M.
$\$ 2.50$ extra

## No. 14 ADJUSTABLE CLUTCH DRIVER

Adjustable clutch adapts driving torque to specific operation, insuring uniform results. Spindle idles until operating pressure is applied.
Net weight, 8 lbs.; overall length, $15 \frac{1}{2}$ "; shipping weight, 12 lbs. Price, complete, specify voltage-(Cat. No. 169)
..... $\$ 90.00$
${ }^{*}$ Special Speeds-750, 1000 or 1600 R.P.M.
.$\$ 2.50$ extra

## No. $14-90^{\circ}$ ANGLE ADJUSTABLE DRIVER

Several $90^{\circ}$ angle heads with various shanks or sockets, and adjustable clutch feature adapt this unit to many special assembly operations in hard-to-reach places. See Master Catalog for available heads, and Cat. numbers.
Net weight, $91 / 2 \mathrm{lbs}$; overall length, $181 / 4$ ", shipping weight, 13 lbs.
Price, complete, with one head-(except 305), specify voltage............ $\$ 118.00$ With No. 305 Head
128.00
-Special Speeds- 350 or 700 R.P.M.
2.50 extra

No. 18 SCREW DRIVERS ON NEXT PAGE

## ELECTIBIC TODL IEEADQUARTEIBS"

## SCREW DRIVERS (Continued)

## No. 18 POSITIVE CLUTCH DRIVER

Positive clutch permits spindle to idle until operating pressure engages clutch jaws. Kicks out when pressure is released.
Net weight, 9 lbs ; overall length, $141 / \mathrm{m}^{\prime \prime}$; shipping weight, $113 / 4 \mathrm{lbs}$. Price, complete, specify voltage-(Cat. No.54)
$\$ 77.00$ *Special Speeds-750, 1000 or 1600 R.P.M.
. $\$ 2.50$ extra

## No. 18 ADJUSTABLE CLUTCH DRIVER

Selectivity of adjustable clutch and power of this unit ideal for tough production work. Clutch automatically releases each screw at uniform depth. Spindle idles until pressure is applied.
Net weight, $10 \frac{1}{2}$ lbs.; overall length, $17 \frac{1}{4}$ " $;$ shipping weight, 16 lbs . Price, complete, specify voltage-(Cat. No. 164)..
$\$ 98.00$ 'Special Speeds-750, 1000 or 1600 R.P.M.

## No. $18-90^{\circ}$ ANGLE ADJUSTABLE DRIVER

Limited clearance, corner work and other obstacles to production screw driving and nut running are overcome by the various $90^{\circ}$ angle heads and adjustable clutch. Several interchangeable heads, with various shanks or sockets. See Master Catalog for Head Specifications and Code Numbers.
Net weight, 12 lbs.; overall length, $195 / 8^{\prime \prime}$; shipping weight, 18 lbs . Price, specify voltage, with one right-angle head (except 305)
$\$ 126.00$ With No. 305 Head.
136.00
'Special Speeds- 350 or 700 R.P.M.
M........ $\$ 2.50$ extra
Reversing Switch for all No. 18 Drivers. $\qquad$ $\$ 7.50$ extra

## 5/8" ELECTRIC NUT RUNNER POSITIVE, ADJUSTABLE AND $90^{\circ}$ ANGLE



The pin-type clutch in the spindle of the Positive unit automatically disengages when driving pressure is released. In the Adjustable unit the clutch automatically releases each screw at the same torsion point, assuring uniform results. Free spindle idles until operating pressure engages the clutch jaws. Adjustment of tension is quickly made.
For heavy duty screw driving and production assembly nut tightening. Has quick-change chuck with $5 / 8^{\prime \prime}$ hex. socket. Can be cquipped with reversing switch. End switch handle is optional at no extra cost.
Capacity: Machine screws and nuts- $1 / 8^{\prime \prime}$ diameter; lag screws-up to $3 / 8^{\prime \prime} \times$ $4 \frac{1}{2}{ }^{\prime \prime}$ long.
Standard No-load speed, 500 R.P.M.
Special Speeds-350 R.P.M.
Reversing Switch.
85.00 extra
$\$ 10.00$ extra

## 5/8" POSITIVE CLUTCH NUT RUNNER <br> (Illustrated)

With Side Switch Handle-(Cat. No. 55).
$\$ 140.00$ With End Switch Handle-(Cat. No. 392).
140.00

Net weight, 213 i. lbs.; overall length, $207 / 8^{\prime \prime}$; shipping weight $281 / 2 \mathrm{lbs}$.

## 5/8" ADJUSTABLE CLUTCH NUT RUNNER

With Side Switch Handle-(Cat. No. 352)................................................... $\$ 160.00$
With End Switch Handle-(Cat. No. 373) 160.00

With End Switch Handle-(Cat. No. 373 ).......................................
Net weight 27 lhs.; overall length, $213 / 8^{\prime \prime}$; shipping weight, 29 lbs .

## $5 / 8^{\prime \prime}-90^{\circ}$ ANGLE ADJUSTABLE NUT RUNNER

Can be equipped with any of 4 driving heads with various shanks or sockets. See Master Catalog for Head specifications and Cat. Numbers.
Net weight, $28 \frac{1}{2}$ lbs.; overall length, $24 \frac{1}{2}{ }^{\prime \prime}$; shipping weight, 38 lbs . Price, specify voltage, with any one right-angle head
$\$ 200.00$
Standard Voltage (All above units) - 110 or 220.
On special order 125 or 240 volts. Universal Motors.

## 7/8" ELECTRIC NUT RUNNER POSITIVE, ADJUSTABLE AND $90^{\circ}$ ANGLE

The most powerful unit for production assembly work. Equipped with quickchange chuck with $5 / 8^{\prime \prime}$ hex. socket. Can be equipped with reversing switch. Right angle unit can be had with end switch handle instead of side switch and spade handle, no extra cost.
Capacity: Machine screws and nuts-up to $7 / \mathbf{s}^{\prime \prime}$ diameter; lag screws-up to $1 / 2^{\prime \prime} \times 5 \frac{1}{2}{ }^{\prime \prime}$ long.
Standard No-load Speed, 500 R.P.M.
Special Speeds- 350 or 900 R.P.M.
. $\$ 5.00$ extra
Reversing Switch. $\$ 10.00$ extra

## 7/8" POSITIVE CLUTCH NUT RUNNER

Net weight, 35 lbs .; overall length, $213 / 4^{\prime \prime}$; shipping weight 43 lbs .
(Cat. No. 56)
$\$ 170.00$

## $7 / 8^{\prime \prime}$ ADJUSTABLE CLUTCH NUT RUNNER <br> (Illustrated)

Net weight, $47 \frac{1}{2} \mathrm{lbs}$.; overall length, $263 / 8^{\prime \prime}$; shipping weight, 57 lbs (Cat. No. 353)
$\$ 200.00$

## $7 / 8^{\prime \prime}-90^{\circ}$ ANGLE ADJUSTABLE NUT RUNNER

Can be equipped with either of 2 driving heads, with various shanks or sockets. Net weight, $52 \frac{1}{2}$ lbs.; overall length, $283 / /^{\prime \prime}$; shipping weight, 65 lbs
Price, with No. 505 Right Angle Head
$\$ 270.00$
Price, with No. 506 Right Angle Head
$\$ 270.00$

## 1" ELECTRIC NUT RUNNER

A positive clutch driver with low spindle speed and exceptionally high torque Can also be supplied with solid spindle and $34^{\prime \prime}$ chuck for heavy duty drilling and slow speed reaming.
Capacity: Lag screws-3/4 $\times 6^{\prime \prime}$; nuts and bolts- $1^{\prime \prime}$ diameter.
No-load Speed, 90 R.P.M.
Special Speeds-175 R.P.M.
$\$ 5.00$ extra
Special Speeds-175 R.P.M..................................................... $\$ 5.0$
Net weight, $30^{3} / 4$ lbs.; overall length, $22^{3} / 4^{\prime \prime}$, shipping weight, $393 / 4 \mathrm{lbs}$.
Price, with quick-change chuck, $5 / 8^{\prime \prime}$ hex. socket-(Cat. No. 245) ...... $\$ 170.00$
Price, with solid spindle and $3 / 4^{\prime \prime}$ Jacobs chuck and key...............
185.00

Standard Voltage (All above units) - 110 or 220.
On special order 125 or 240 volts. Universal Motors.

## NEW-3/8" IMPACT WRENCH

The Electric Impact Wrench is a completely new unit for rapid tightening and removal of nuts, bolts and cap screws. In tightening operations, the Wrench spins a free-running fastener to a seating position by high speed direct drive; immediately the clutch throws into operation a rapid, positive hammering action which tightens the fastener with thousands of quick, sharp blows per minute. Just a few seconds of this positive impacting is all that's needed for maximum tightness. And there is practically no torque reaction to the operator -no uncomfortable jarring or twisting-no "fighting" the Wrench to get results.
To remove fasteners-even the stubborn "frozen" ones-flip the convenient reversing switch and the impact mechanism hammers the part loose, then spins it off quickly by direct drive. The action and power of the Wrench are the same in either direction. And the motor cannot be stalled-even if the spindle is stopped "dead"-so there's no danger of overload or "burn-out".
With all this power and performance, the Impact Wrench is light and perfectly balanced. Sturdy cast-aluminum housings combine strength and lightness; a comfortable pistol-grip side handle contains the instant-release trigger switch; the toggle reversing switch is conveniently located in a recess above the handle for thumb operation. And the full-powered universal motor is ball-bearing mounted and amply ventilated. All spindles and gears are of special heattreated alloy steel. The Impact Wrench is conservatively rated to drive and loosen nuts, bolts and cap screws up to $3 / 8$ " thread size.


## SPECIFICATIONS

Capacity: Nuts, bolts, cap screws.
Blows per minute
Overall length
$\qquad$
$\qquad$ .............
 Standard Equipment-3-conductor cable and plug; side handle with automatic-release switch; reversing switch; "universal" motor. Drive square-1/2".
Standard Voltages-110 or 220. On special order 125 or 240 volts. Catalog No. 534. Impact Wrench only (specify voltage)
$\$ 105.00$ The Impact Wrench is also offered with a group of six hexagon sockets in sizes ${ }^{9} 16^{\prime \prime},{ }^{5} x^{\prime \prime}, 3 / 4^{\prime \prime},{ }^{13} 16^{\prime \prime}, 7 / 8^{\prime \prime}$, and ${ }^{15}{ }^{16}{ }^{\prime \prime}$. These sockets are quickly interchangeable on the wrench and allow the unit to handle a great variety of nuts, bolts and cap screws.
Catalog No. 535. Impact Wrench with Socket Set (specify voltage).. $\$ 109.00$

־PELECTIRIC TODL. HEADQUARTEIRS"
STANDARD SCREW DRIVER BITS

With $7 / 16^{\prime \prime}$ Hex. Shanks-for No. 14 and No. 18 Drivers

| For use with these Screw Types and Sizes | Bit Length | Bit and Stan'd Finder Assem. No. | Price <br> Each | $\begin{aligned} & \text { Bit } \\ & \text { Only } \\ & \text { No. } \end{aligned}$ | Price Each | Standard <br> Finder No. | Price Each |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nos. 4, 5, 6, 7 Wood | $2{ }^{1} 2^{\prime \prime}$ | 5345 | \$1.55 | 5104 | \$0.90 |  |  |
| Nos. 4, 5. 6 Machine | $4^{\prime \prime}$ | 15085 | 2.05 | 15049 | 1.40 |  |  |
| Nos.4,5.6 Sheet Metal | $6^{\prime \prime}$ | 15086 | 2.15 | 15050 | 1.50 | 5103 | \$0.60 |
|  | $8^{\prime \prime}$ | 15087 | 2.25 | 15051 | 1.60 |  |  |
|  | $10^{\prime \prime}$ | 15088 | 2.35 | 15052 | 1.70 |  |  |
| Nos. 8, 9 Wood | $21 / 2^{\prime \prime}$ | 5346 | 1.55** | 5106 | .90** |  |  |
| No. 6 Stove | $4^{\prime \prime}$ | 15089 | 2.05 | 15053 | 1.40 |  |  |
| Nos. 7, 8 Sheet Metal | $6^{\prime \prime}$ | 15090 | 2.15 | 15054 | 1.50 | 5105 | . 60 |
| No. 8 Machine | $8^{\prime \prime}$ | 15091 | 2.25 | 15055 | 1.60 |  |  |
| No. 10 Filister | $10^{\prime \prime}$ | 15092 | 2.35 | 15056 | 1.70 |  |  |
| Nos. 10, 11 Wocd | $22^{\prime \prime}$ | 5330 | 1.55** | 5108 | .90** |  |  |
| No. 10 Sheet Metal | $4^{\prime \prime}$ | 15093 | 2.05 | 15057 | 1.40 |  |  |
| No. 10 Machine | $6^{\prime \prime}$ | 15094 | 2.15 | 15058 | 1.50 | 5107 | . 60 |
| (except Filister) | $8^{\prime \prime}$ | 15095 | 2.25 | 15059 | 1.60 | 5107 | . 60 |
| No. 12 Filister | $10^{\prime \prime}$ | 15096 | 2.35 | 15060 | 1.70 |  |  |
| No. 12 Wood | $21 / 2^{\prime \prime}$ | 5343 | $1.55{ }^{* *}$ | 5110 | .90** |  |  |
| No. 12 Sheet Metal | $4^{\prime \prime}$ | 15097 | 2.05 | 15061 | 1.40 |  |  |
| No. 12 Machine | $6^{\prime \prime}$ | 15098 | 2.15 | 15062 | 1.50 | 5109 | . 60 |
| (except Filister) | $8^{\prime \prime}$ | 15099 | 2.25 | 15063 | 1.60 | 5100 | . 60 |
| $1 / 4{ }^{\prime \prime}$ Filister | $10^{\prime \prime}$ | 15100 | 2.35 | 15064 | 1.70 |  |  |
| No. 14 Wood <br> No. 14 Sheet Metal <br> $1 / 1^{\prime \prime}$ Machine (except Filister) | 21/2" | 5344 | 1.55** | 5112 | . $90^{* *}$ |  |  |
|  | $4 \prime$ | 15101 | 2.05 | 15065 | 1.40 |  |  |
|  | $6^{\prime \prime}$ | 15102 | 2.15 | 15066 | 1.50 | 5111 | . 60 |
|  | $8^{\prime \prime}$ | 15103 | 2.25 | 15067 | 1.60 |  |  |
|  | $10^{\prime \prime}$ | 15104 | 2.35 | 15068 | 1.70 |  |  |
| $\left.\begin{array}{l} \text { No. } 16 \text { Wood } \\ S_{16}{ }^{\prime \prime} \text { Filister } \end{array}\right\}$ | $21 / 2^{\prime \prime}$ | 5329 | $1.55{ }^{* *}$ | 5114 | . $90^{* *}$ |  |  |
|  | $4^{\prime \prime}$ | 15105 | 2.05 | 15069 | 1.40 |  |  |
|  | $6^{\prime \prime}$ | 15106 | 2.15 | 15070 | 1.50 | 5113 | . 60 |
|  | $8^{\prime \prime}$ | 15107 | 2.25 | 15071 | 1.60 |  |  |
|  | $10^{\prime \prime}$ | 15108 | 2.35 | 15072 | 1.70 |  |  |
| No. 18 Wocd 3/16" Sheet Metal | $25,8^{\prime \prime}$ | 5364 | 1.80 | 5116 | . 95 |  |  |
|  | $4^{\prime \prime}$ | 15109 | 2.30 | 15073 | 1.45 |  |  |
|  | $6^{\prime \prime}$ | 15110 | 2.40 | 15074 | 1.55 | 5115 | . 80 |
|  | $8^{\prime \prime}$ | 15111 | 2.50 | 15075 | 1.65 |  |  |
|  | $10^{\prime \prime}$ | 15112 | 2.60 | 15076 | 1.75 |  |  |
| $\left.\begin{array}{l}3 / 16^{\prime \prime} \text { Machine (except Filister) } \\ \text { No. } 20 \text { Wood } \\ 3 / 8^{\prime \prime} \text { Filister }\end{array}\right\}$ | $23 /{ }^{\prime \prime \prime}$ | 5366 | 1.90 | 5118 | 1.00 |  |  |
|  | $4^{\prime \prime}$ | 15113 | 2.40 | 15077 | 1.50 |  |  |
|  | $6^{\prime \prime}$ | 15114 | 2.50 | 15078 | 1.60 | 5117 | . 85 |
|  | $8^{\prime \prime}$ | 15115 | 2.60 | 15079 | 1.70 |  |  |
|  | $10^{\prime \prime}$ | 15116 | 2.70 | 15080 | 1.80 |  |  |
| $\left.\begin{array}{l} \text { No. } 24 \text { Wood } \\ 3 / 8^{\prime \prime} \text { Machine (except Filister) } \end{array}\right\}$ | $23{ }^{3 / 7}$ | 5369 | 2.25 | 5120 | 1.10 |  |  |
|  | $4^{\prime \prime}$ | 15117 | 2.75 | 15081 | 1.60 |  |  |
|  | $6^{\prime \prime \prime}$ | 15118 | 2.85 | 15082 | 1.70 | 5119 | 1.10 |
|  | $8^{\prime \prime}$ | 15119 | 2.95 | 15083 | 1.80 |  |  |
|  | $10^{\prime \prime}$ | 15120 | 3.05 | 15084 | 1.90 |  |  |

*All lengths shown are the projecting lengths, from chuck to end of bit; they do not indicate overall lengths.
**See quantity price table in next column.

## BIT EXTENSIONS

Screw Driver Bit Extensions are available in various lengths, with ${ }^{1 / 4}{ }^{\prime \prime}$ or ${ }^{7} / 6_{6} 1$ shank to fit Torsimeter, Scrugun or Screw Driver Chuck, and a chuck socket to take standard bits and socket wrenches. These Extensions greatly reduce bit replacement costs, where long bits are needed.

| Cat. No. | Length | Shank Size | Price Each | Cat. No. | Length | Shank Size | Price Each |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22581 | $4^{\prime \prime}$ | $1 / 4$ " | \$1.80 | 15023 | $4^{\prime \prime}$ | 7/16" | \$1.65 |
| 22539 | $6^{\prime \prime}$ | $1 /{ }^{\prime \prime}$ | 1.80 | 14989 | $6^{\prime \prime}$ | 7161 | 1.80 |
| 22540 | $8^{\prime \prime}$ | $1 / 4$ | 1.90 | 5287 | $8^{\prime \prime}$ | 716 | 1.95 |
| 22323 | $10^{\prime \prime}$ | $1{ }^{1 / 4}$ | 1.90 | 5288 | $10^{\prime \prime}$ | $7{ }_{7} 110$ | 2.15 |

SCREW DRIVER BITS FOR PHILLIPS HEAD SCREWS FOR SCRUGUN, TORSIMETER, 14 AND 18 SCREW DRIVERS

A special bit is required for driving the Phillips head screw, which has a cross form slot instead of the conventional slot and four different slot sizes designated as Nos. 1, 2, 3 and 4.

| Slot Size | Cat. No. | Unit Used with | Price Each | $\begin{gathered} \text { Phice } \\ \text { EACH } \\ \text { Box OF } 6 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| No. 1 | - 17922 | Torsimeter and Scrugun | 8 . 70 | \$ . 65 |
| No. 1 | 18938 | Nos. 14 and 18 S.D. | . 90 | . 85 |
| No. 2 | 17923 | Torsimeter and Scrugun | . 70 | . 65 |
| No. 2 | 17924 | Nos. 14 and 18 S.D. | . 90 | . 85 |
| No. 3 | 21366 | Torsimeter and Scrugun | . 70 | . 65 |
| No. 3 | 17925 | Nos. 14 and 18 S.D. | . 90 | . 85 |
| No. 4 | 17926 | Nos. 14 and 18 S.D. | . 90 | . 85 |

## With $1 / 4^{\prime \prime}$ Hex. Shanks-For Torsimeter and Scruguns

| For use with these Screw Types and Sizes | Bit Length | Bit and <br> Stand <br> Finder <br> Assem. <br> No. | Price Each | $\begin{aligned} & \text { Bit } \\ & \text { Only } \\ & \text { No. } \end{aligned}$ | Price Each | $\begin{aligned} & \text { Stand- } \\ & \text { Find } \\ & \text { Finder } \\ & \text { No. } \end{aligned}$ | Price Each |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nos. 2, 3 Wood No. 2, 3 Machine No. 2 Sheet Metal No. 4 Filister | $\begin{aligned} & 114^{\prime \prime \prime} \\ & 234_{4}^{\prime \prime} \end{aligned}$ |  |  | 18051 22396 | \$0.70** | $\begin{aligned} & 18050 \dagger \\ & 20482 \pm \\ & 22397 \dagger \\ & 23979 \end{aligned}$ | $\begin{array}{r} \$ 0.60 \\ 1.60 \\ 1.00 \\ 1.00 \end{array}$ |
| Nos. 4, 5, 6, 7 Wood No. 4 5. 6 Machine Nos. 4, 5 Sheet Metal No. 6 Sheet Metal | $\begin{aligned} & 11 / 4^{\prime \prime \prime} \\ & 234_{4}^{\prime \prime \prime} \\ & 51_{4}^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 17690 \\ & 22111 \end{aligned}$ | $\begin{aligned} & \$ 1.55^{* *} \\ & 1.90 \end{aligned}$ | $\begin{aligned} & 13208 \\ & 17688 \\ & 22108 \end{aligned}$ | $\begin{array}{r} .70^{* *} \\ .90^{* *} \\ 1.25 \\ \hline \end{array}$ | $\begin{gathered} 13210 \ddagger \\ 15588 \dagger \\ 5103 \\ 5103 \end{gathered}$ | . 60 |
| Nos. 8, 9 Wood <br> No. 6 Stove; 8 Mach <br> Nos. 7,8 Sheet Metal <br> No. 10 Filister | $\begin{aligned} & 114^{\prime \prime \prime} \\ & 234^{\prime \prime \prime} \\ & 51_{4}^{\prime \prime \prime} \\ & \hline \end{aligned}$ | $\begin{aligned} & 13356 \\ & 13469 \end{aligned}$ | $\begin{aligned} & 1.55^{* *} \\ & 1.90 \end{aligned}$ | $\begin{aligned} & 13207 \\ & 13353 \\ & 13470 \end{aligned}$ | $\begin{array}{r} .70^{* *} \\ .90^{* *} \\ 1.25 \\ \hline \end{array}$ | $\begin{gathered} 13209 \ddagger \\ 16529 \dagger \\ 5105 \\ 5105 \\ \hline \end{gathered}$ | .60 .60 .60 |
| Nos. 10, 11 Wood No. 10 Sheet Metal <br> No. 10 Machine <br> No. 12 Filister | $\begin{aligned} & 114^{\prime \prime \prime} \\ & 233^{\prime \prime \prime} \\ & 234_{4}^{\prime \prime \prime} \end{aligned}$ | 18593 | 1.65** | $\begin{aligned} & 15475 \\ & 23494 \\ & 18594 \end{aligned}$ | $\begin{aligned} & .80^{* *} \\ & 1.00^{* *} \\ & 1.00^{* * *} \end{aligned}$ | $\begin{array}{r} 15469 \ddagger \\ 23493 \ddagger \\ 5107 \ddagger \end{array}$ | $\begin{array}{r} .60 \\ 1.00 \\ \hline 60 \end{array}$ |
| No. 12 Wood, Sheet <br> Metal. Machine <br> $11^{\prime \prime}$ Filister | $\begin{aligned} & 11 / 4^{1 \prime \prime} \\ & 23_{4}^{\prime \prime \prime} \end{aligned}$ | 21731 | 1.75** | 16772 21730 | $\begin{gathered} .90^{* *} \\ 1.10^{* *} \end{gathered}$ | $\begin{array}{r} 16773 \ddagger \\ 5109+ \end{array}$ | .60 .60 |

**QUANTITY PRICES-Standard Bits and Bit-Finder Assemblies in this group are packed and stocked in boxes of six. We recommend ordering in standard packages or multiples thereof and offer special quantity prices which apply on designated quantities, all of one size only.
sed with Scrugun only.
$\dagger$ Used with Torsimeter and $90^{\circ}$ heads.

| One | In Box of Six | In $1 / 2$-Gross Lot | In 1-Gress Lot | In 4-Gross Lot |
| :---: | :---: | :---: | :---: | :---: |
| \$0.70 | \$0.55 | \$0.50 | \$0.45 | \$0.40 |
| . 80 | . 65 | . 55 | . 50 | . 45 |
| . 90 | . 70 | . 65 | . 60 | . 50 |
| 1.00 1.10 | . 80 | . 70 | .65 .70 | . 55 |
| 1.55 | 1.20 | 1.10 | 1.00 | . 85 |
| 1.65 | 1.30 | 1.20 | 1.05 | . 90 |
| 1.75 | 1.40 | 1.30 | 1.15 | 1.00 |

SOCKET WRENCHES


## ELECTIBIC TDOL HEADQUARTEIBS’•




PORTABLE ELECTRIC QUICK-SAWS

Complete safety, adjustable depth of cut, adjustable angle; increased power, perfect balance, less weight, 2 -pole instant release switch, sturdy gear and bearing construction; check these features of the Quick-Saw line.

## 7-inch PORTABLE QUICK-SAW

(Depth of Cut-23/8")
The most widely useful size. Handles all popular lumber sizes.
Diameter Saw Blade, $71 /{ }^{\prime \prime}$; No-load Speed, 3200 R.P.M.
Maximum vertical depth of cut, $23 / \mathrm{s}^{\mathrm{n}}$.
Net weight, $18 \frac{1}{4}$ lbs.; overall length, $17 \frac{1}{2}$ "; shipping weight, 38 lbs .
Price, complete, specify voltage-(Cat. No. 260)
$\$ 125.00$

## 8-inch PORTABLE QUICK-SAW <br> (Depth of Cut-25/8")

Especially adapted for quick cut-off work; well balanced for one-hand operation. Diameter Saw Blade, $8 \frac{1}{6}$ "; No-load Speed, 5000 R.P.M.
Maximum verticar depth of cut, $25 / \mathrm{m}^{\prime \prime}$.
Net weight, $201 / 4 \mathrm{lbs}$; overall length, $131 / 4{ }^{n}$; shipping weight, 45 lbs .
Price, complete, specify voltage-(Cat. No. 382).
$\$ 145.00$

## 9-inch PORTABLE QUICK-SAW

(Depth of Cut-31/8")
A popular large size unit for work requiring greater depth of cut. Diameter Saw Blade, $91 / 4$ "; No-load Speed, 2500 R.P.M. Maximum vertical depth of cut, $31 / \delta^{\prime \prime}$.
Net weight, $26 \mathrm{lbs} . ;$ overall length, $191 / 4^{\prime \prime}$; shipping weight, 54 lbs .
Price, complete, specify voltage-(Cat. No. 375)
$\$ 155.00$

STANDARD EQUIPMENT: (all units) 3 -wire cable and plug, Combination Rip and Cross Cut Blade, Carrying Case. Universal Motors, operate on A.C. or D.C.

Standard Voltage-110 or 220. On special order 125 or 240 volts.

## NEW QUICK-SAW ARM

Quick-Saw Arm quickly converts portable Quick-Saw to versatile radial Saw; multiplies utility of portable saw, improves speed and accuracy on any of these cuts: cross-cut, mitre, bevel, compound angle, ripping.
Quick-Saw Arm clamps to carpenter's saw horse or table. All Quick-Saws fit the adjustable Saw Carriage and all depth and angle adjustments of Saw can be made while in the Arm. Height, angle and balance adjustments of Saw Arm are quickly made and regulated on the work-head column.
Net Weight (Quick-Saw Arm only), $421 / 2 \mathrm{lbs}$.
Maximum Travel on cutting stroke, $201 / 2^{\prime \prime}$.
Depth of cut-21/4" with 7" Quick-Saw
$21 / 2^{\prime \prime}$ with $8^{\prime \prime}$ Quick-Saw
$3^{\prime \prime}$ with $9^{\prime \prime}$ Quick-Saw

Angle of cut- $0^{\circ}$ to $180^{\circ}$
Bevel Angle- $0^{\circ}$ to $45^{\circ}$
Catalog No. 31617. Price complete

SAW BLADES



D

$E$

$G$

$\rfloor$


CROSSCUT BLADE (A)
Designed for fast, smooth cross-cutting. Makes a smoother cut than the Combination Blade furnished as tandard equipment.

| Cat. | Blade | Use with | Price |
| :---: | :---: | :---: | ---: |
| No. | Diam. | Elec. Saw | Each |
| 19773 | $71^{\prime \prime}$ | 7 -inch | $\$ 5.25$ |
| 23160 | $81^{\prime \prime}$ | 8 -inch | 6.50 |
| 22740 | $91^{\prime \prime}$ | 9 -inch | 7.35 |

## NON-FERROUS METAL CUTTING BLADE (D)

This Blade is for use on non-ferrous metals only. Has teeth shaped and set especially for cutting soft, light gauge non-ferrous metals, including lead.

| Cat. | Blade | Use with <br> No. | Price <br> Diam. |
| :---: | :---: | :---: | :---: |
| 21868 | $71 /{ }^{\prime \prime}$ | Elec. Saw | Each |
| 24073 | 81 -inch $^{\prime \prime}$ | 85.85 |  |
| 22744 | $91^{\prime \prime}$ | 8-inch | 7.00 |
|  |  | 9-inch | $\mathbf{7 . 6 5}$ |

NAIL CUTTING BLADE (F)
For opening boxes and crates, ripping up floors, where nails are encountered.

| Cat. No. | For Saw | Price |
| :--- | :---: | ---: |
| 20360 | 7 -inch | $\$ 8.25$ |
| 23159 | -inch | 9.35 | $\begin{array}{lll}23159 & 8 \text {-inch } & 9.35 \\ 22741 & 9 \text {-inch } & 10.00\end{array}$

FRICTION SAW BLADE (J)
For cutting corrugated galvanized sheet. Cuts faster, with less dirt than abrasive disc. Blade is taper-ground for clearance.

| Cat. | Blade | Use with | Price |
| :---: | :---: | :---: | ---: |
| No. | Diam. | Elec. Saw | Each |
| 24771 | $6^{\prime \prime}$ | 7-inch | $\$ 7.00$ |
| 24772 | $7^{\prime \prime}$ | 8-inch | 7.90 |
| 24773 | $8^{\prime \prime}$ | 9-inch | $\mathbf{8 . 7 5}$ |

## WET ATTACHMENT

Forked nozzle sprays water against both sides of blade-control valve regulates spray. Complete with 10 Ft length of hose and a fitting which couples to standard type water faucet 31006 -Wet Attachment ....... $\$ 12.00$


Black\& Decker

BENCH GRINDERS are equipped with ball bearings, protected from dust and set to minimize spindle vibration; tool rests adjustable for wheel wear; strong wheel guards, completely enclosed (except on 6" Standard); wide, sturdy base with rubber feet; adjustable spark shields on $8^{\prime \prime}$ and $10^{\prime \prime}$ Grinders. Heavy-Duty Grinders can be equipped with eye shields and pedestals; and can be used as combination grinders for grinding and wire brushing. Motors are not universal; supplied only for voltages and currents listed under each unit. Spindle no-load speeds are: 25 cycle, 1500 R.P.M.; 50 cycle, 3000 R.P.M.; 60 cycle, 3600 R.P.M.; (except $10^{\prime \prime}$ unit, which is 50 cycle, 1500 R.P.M.; 60 cycle, 1800 R.P.M.).

## 6" STANDARD BENCH GRINDER



Wheel size, $6^{\prime \prime} \times 56^{\prime \prime} \times 1 / 2^{\prime \prime}$. Net weight, $311 / 2 \mathrm{lbs}$.
Motor Rating, 1/4 H.P. (1/5 H.P. for 25 cycle).
For all standard A.C. 1-phase volts and cycles only. Not for D.C.
Standard Equipment-1 grinding wheel and 1 wire wheel brush.


PEDESTAL
For $6^{\prime \prime} \& 8^{\prime \prime}$ Grinders $\$ 28.00$

For $10^{\prime \prime}$ Grinder $\$ 32.00$

## 8" BALL BEARING BENCH GRINDER



Wheel size, $8^{\prime \prime} \times 7 / 8^{\prime \prime} \times 5 / 8^{\prime \prime}$. Net weight, 82 lbs.
Motor Rating, $3 / 4$ H.P.
Standard Equipment-2 Grinding Wheels; 1 med., 1 fine.
Motor not universal. Not available for direct current. Supplied in standard voltages and currents as follows:

| Voltage... | 110 or 220 | 220 or 440 |
| :---: | :---: | :---: |
| Phase. | 1 | 3 |
| Cycle................................ | 50-60 | 50-60 |

Price, specify voltage, phase and cycle...
.. $\$ 98.00$

Price, complete, specify voltage and cycle. $\$ 38.00$

## 6" HEAVY DUTY BENCH GRINDER



Wheel size, $6^{\prime \prime} \times 3 / 4^{\prime \prime} \times 1 / 2^{\prime \prime}$. Net weight, 45 lbs.
Motor Rating, $1 / 3$ H.P.
Supplied for $50-60$ cycle, 1 phase A.C. 110 or 220 volts.
Standard Equipment-2 grinding wheels; 1 medium, 1 fine.
(Wheel guards are wide enough to accommodate a standard 3 -section wire wheel brush without any change in the guard).

Price, complete, specify voltage and cycle-(Cat. No. 67).
$\$ 58.00$

## ILLUMINATED EYE SIIIELDS

New Illuminated Eye Shields have been developed for use with our $6^{n}$ Heavy Duty, $8^{n}$ and $10^{\prime \prime}$ Bench Grinders. Shields are furnished with adjustable brackets and boits for attachment to the Wheel Guards. Glass is shatter proof nd work is illuminated from both sides of the eye shield. If the grind oltage ords, plugs and switches for use in 110 or 220 volt receptacles. Otherwise, the eye shields may be operated with the main grinder switch.
Cat. No. 30050 An assembly of a pair of 110 volt illuminated Eye Shields, to be connected to and operated by the 110 volt Bench Grinder switch...
Cat. No. 30051 An assembly of a pair of 220 volt illuminated Eye Shields, to be connected to and operated by the 220 volt Bench Grinder switch......................................................................................... $\$ 19.00$
Cat. No. 30142 An assembly of a pair of 110 volt illuminated Eye Shields, with cord, plug and switch, operated independently of the Bench Grinder switch...................................................................... $\$ 20.00$
Cat. No. 30143 An assembly of a pair of 220 volt illuminated Eye Shields, with cord, plug and switch, operated independently of th Bench Grinder switch...
Cat. No. 30144 An assembly of a single 110 volt illuminated Eye Shield, with cord, plug and switch, operated independently of the Bench Grinder switch........................................................................ $\$ 10.50$
Cat. No. 30145 An assembly of a single 220 volt illuminated Eye Shield, with cord, plug and switch, operated independently of the Bench Grinder switch.. $\$ 10.50$

FOR ALL BENCII GRINDERS Cat. No. Item Price
19115 Cutter Type Wheel dresser........................ $\$ 1.40$ 21961 Diamond Wheel dresser 5.00

FOR 6" BENCH GRINDERS $640512^{\prime \prime}$ Thrd. Chuck R.H... 8.00 6664 Spindle Ext. R.H........... 4.00 6664 Spindle Ext. R.H........... 4.00 ${ }_{3564} 665$ Tprd. Buff Spindle L. H. $\quad$ S.00 3565 Tprd. Buff Spindle R.H. 5.00

## FOR 8" BENCII GRINDERS

Cat. No. Item Price
6666 Spindle Ext. R.H........... $\$ \mathbf{5 . 5 0}$
6667 Spindle Ext. L.H........... 5.50

FOR 10" BENCH GRINDERS
12297-C. Spindle ${ }^{\text {Tx }}$ x. R.H....... $\$ 8.00$

## 10" BALL BEARING BENCH GRINDER

Wheel Size, $10^{\prime \prime} \times 1^{\prime \prime} \times 3 / 4^{\prime \prime}$. Net Weight, 120 lbs .
Motor Rating, 1 H.P., (3/4 H.P. for 25 cycle).
Standard Equipment-2 Grinding Wheels, 1 med.; 1 coarse. Motor, not Universal. Not available for direct current.


Supplied in standard voltages and current as follows:

Voltage.......................................................... 110, 220 Phase........................................................................ 1
Cycle...
25, 50-60
220, 440
3
50
50-60
$\$ 138.00$


BENCH BACK-STAND GRINDING

The Back-Stand Grinding method employs a belt, bringing many square inches of abrasive in contact with the work. Longer abrasive life results in cooler grinding. A compress contact wheel, mounted on the grinder spindle, has a cushioning action allowing the abrasive belt to conform to the shape of the piece being ground. Idler unit has swivel and tension adjustments; can be used on right or left hand side of grinder.

## BACK STAND IDLER ASSEMBLY

Cat. No. 30328

## COMPRESS CONTACT WHEELS

Catalog No. $308976^{\prime \prime} \times 21 / 2^{\prime \prime} \times 5 / 8^{\prime \prime}$ Contact Wheel for use on $8^{\prime \prime}$ Bench
$\qquad$
Catalog No. $308988^{\prime \prime} \times 21 / 2^{\prime \prime} \times 3 / 4^{\prime \prime}$ Contact Wheel for use on $10^{\prime \prime}$ Bench Grinder.$\$ 15.00$

## GRIT ABRASIVE BELTS

Catalog No. $3292260^{\prime \prime} \times 21 / 2^{\prime \prime} \times$ No. 24 Grit Abrasive Belt. $\$ .72$
Catalog No. $3102860^{\prime \prime} \times 21 / 2^{\prime \prime} \times$ No. 36 Grit Abrasive Belt.
Catalog No. $3102960^{\prime \prime} \times 2 \frac{1}{2} 2^{\prime \prime} \times$ No. 80 Grit Abrasive Belt......................... . 54
Catalog No. $3103060^{\prime \prime} \times 21 / 2^{\prime \prime} \times$ No. 150 Grit Abrasive Belt.................. . 52

## "e ELECTIRIC TOOL HEADQUARTERS"

## PORTABLE ELECTRIC SANDERS

Electric Sanders are most versatile surfacing tools, used with a wide variety of attachments for sanding, grinding, wire brushing, rubbing and planing operations on metal, wood, stone, tile, concrete and many other surfaces.
These Sanders are fully powered with "universal" motors; perfectly balanced, with reversible side handles for right or left hand use; spiral bevel gears of heat-treated alloy are matched and lapped; bearings are greasesealed.

> Standard Voltage-110 or 220 . On special order 125 or 240 volts.


7" STANDARD SANDER (EQUIPPED WITH SPINDLE LOCK) SHOWN ABOVE

Amply powered and constructed for constant production service on all types of metal and wood surfacing.
Diameter of disc........................................................................................................... $7^{\prime \prime}$
$\qquad$



Price, complete, specify voltage-(Cat. No. 92)............................................... $\$ 67.00$

> 7" HEAVY DUTY SANDER (EQUIPPED WITH SPINDLE LOCK)


Designed to meet the demand for a universal motored sander of superior power for production metal finishing.

| Diameter of disc............................................................................................ $7^{\prime \prime}$ |  |
| :---: | :---: |
| No-load speed.............................................................................. 4200 R.P.M. |  |
| Weight: Net......................... $141 / 2 \mathrm{I}$ Ibs. | Shipping ...........................211/2 lbs. |
| Overall length (not including pad). | $18^{\prime \prime}$ |
| Price, complete, specify voltage-(Ca | 93).................................... \$76.00 |

> 9" HEAVY DUTY SANDER (EQUIPPED WITH SPINDLE LOCK)


A new Heavy Duty tool designed for constant production-line use with 9 -inch abrasive dises. New, fast spindle lock for quicker change of pads and abrasive discs. Spiral-bevel gears. Switch and commutator sealed against dust and grit. Bearings also grease-sealed against dust and dirt.
Diameter of disc.


Equipped with reservoir, thumb-operated pump and feeder tube which automatically applies Power-Glaze to the car surface while working. No stopping for hand application; no drying of liquid. Uniform results, more jobs per day. increased power, correct speed, more torque, light weight.
No-load Speed, 1500 R.P.M.; Diameter of Pad, $7^{\prime \prime}$.
Net weight, $103 / 4$ lbs.; overall length, $171 / 2^{\prime \prime}$.
Price, complete, specify voltage-(Cat. No. 97)
STANDARD ELECTRIC POLISHER


Excellent unit for smaller shops. Does not have automatic-feed feature (liquid must be applied by hand). Especially adapted to rubbing-down new paint and lacquer; for buffing and cleaning all metal and wood surfaces and waxing. No-load Speed, 1500 R.P.M.; Diameter of Pad, $7^{\prime \prime}$.
Net weight, $91 / 4 \mathrm{lbs}$; overall length, $151 / 2^{\prime \prime}$.
Price, complete, specify voltage-(Cat. No. 96)
. $\$ 68.00$
Equipment for both Polishers includes flexible rubber pad; sponge rubber cushEquipment
ion pad; lambswool buffing bonnet.
Standard Voltage (both models) 110 or 220 . On special order 125 or 240 .


## WIRE CUP BRUSHES

Made by us for use on Sanders to remove rust, scale and paint; to clean tanks and boat hulls; for cleaning castings and structural steel $5 / 8^{\prime \prime}-11$ thread hub threads on Sander spindle.

No. $180564^{\prime \prime}$ Wire Cup Brush, for $7^{\prime \prime}$ Standard Sander........................................2.50 No. $243535^{\prime \prime}$ Wire Cup Brush for 7" Heavy Duty Sander........................... 3.00 No. $123986^{\prime \prime}$ Wire Cup Brush for $9^{\prime \prime}$ Heavy Duty Sander.......................... 3.50


## SANDING DISCS

Sanding and abrasive discs can be furnished in a variety of grades and grains. Dises designated as "Open Grain" are especially suited for wood sanding (Nos. 16, 24 and 36 for removing paint and varnish); "Closed Grain" discs are for metal work.

| Grade <br> Closed Grain | 7-Inch Sanding Discs |  |  | 91/8-Inch Sanding Discs |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cat. No. | List Price |  | $\begin{aligned} & \text { Cat. } \\ & \text { No. } \end{aligned}$ | List Price |  |
|  |  | Each | Per 100 |  | Each | Per 100 |
| 16 | 17815 | \$0.53 | \$52.20 | 26458 | \$0.70 | \$69.60 |
| 24 | 9990 | . 41 | 40.60 | 10719 | . 55 | 54.20 |
| 36 | 9991 | . 40 | 39.70 | 10720 | . 54 | 53.20 |
| 50 | 9992 | . 38 | 37.20 | 12153 | . 50 | 49.40 |
| 60 | 18489 | . 36 | 35.20 | 18493 | . 48 | 47.20 |
| 80 | 10485 | . 34 | 33.30 | 10721 | . 45 | 44.30 |
| 100 | 12145 | . 34 | 33.30 | 12149 | . 45 | 44.30 |
| 120 | 12146 | . 34 | 33.30 | 12150 | . 45 | 44.30 |
| 150 | 12147 | . 34 | 33.30 | 12151 | . 45 | 44.30 |
| 180 | 12148 | . 34 | 33.30 | 12152 | . 45 | 44.30 |
| Open Grain 16 | 15134 | . 53 | 52.20 | 15137 | . 70 |  |
| 24 | 15135 | . 41 | 40.60 | 15138 | . 55 | 54.20 |
| 36 | 15136 | . 40 | 39.70 | 15139 | . 54 | 53.20 |
| 50 | 12011 | .38 | 37.20 | 12131 | . 50 | 49.40 |
| 60 | 18491 | . 36 | 35.20 | 18495 | . 48 | 47.20 |
| 80 | 12012 | . 34 | 33.30 | 12132 | . 45 | 44.30 |
| 120 | 12013 | . 34 | 33.30 | 12133 | . 45 | 44.30 |

All dises packed 25 to a box.


## REPLACEMENT SANDER PADS AND PARTS

All pads and replacement assemblies are interchangeable on all Sanders and Polishers as the spindle diameter and thread is the same for all units of this group; $5 / 8^{n}-11$ thread.
No. $225895^{\prime \prime}$ Moulded Rubber Pad.

$$
\begin{aligned}
& \text { Pad.................... } \\
& \text { Pad, complete }
\end{aligned}
$$

. $\$ 2.50$
No. $176877^{\prime \prime}$ Moulded Rubber Pad, complet...........
No. $183297^{\prime \prime}$ Heavy Duty Moulded Rubber Pad
No. $183309^{\prime \prime}$ Moulded Rubber Pad
3.50
-3

No. $142373^{\prime \prime}$ Flexible Pad, complete

No. 14551 Replacement Pad for $3^{\prime \prime}$ Flexible Pad 3.50
.. 1.15 No. 10279 Clamp Washer.

## "KOOLFLEX" BACKING PADS



Light-weight, fabric-base, plastic-bonded discs provide greater flexibility, cooler operation and longer life on sanding applications. Used with No. 22589 Moulded Rubber Pad., For maximum flexibility, use one "Koolflex" pad "fith corresponding size abrasive disc. For "feathering" finish, use No. 31000 "Koolflex" pad with $9^{\prime \prime}$ abrasive. For more rigid backing abrasive. Use with Special Clamp Washers abrasive.
No. $310006^{63}$ "" "Koolflex", Backing Pad.
\$1.50
No. $3100187 /{ }^{\text {" }}$ "Koolflex" Backing Pad
2.00

No. 31003 Spec. Clamp Washer-use either pad
.45
No. 31004 Extra-long Clamp Washer, to be used when both "Koolflex" pads are used
.50

## ABRASIVE DISC TRIMMER



Facilitates the complete use of abrasive discs, cutting them down to smaller diameters as outer surface is used up. Trimmer has adjustable center hole pilot on a calibrated swinging arm; a putting wheel mounted on one-piece cuting wheel mounted on one-piece which can be screwed down to the bench.
No. 21808 Abrasive Disc Trimmer, complete.
. $\$ 8.50$
No. 21753 Replacement Cutter.

## - ELECTRIC TOOL HEADQUARTERS"

## ELECTRIC DIE GRINDERS

For die shops, stamping plants, tool rooms; compact, powerful, rugged; equipped with $1 / 4$ " single purpose chuck adaptable to variety of shaped wheels and burrs. Supplied with either bonnet grip or extended handle.
$2^{\prime \prime}$ DIE GRINDER


Maximum Wheel Size ${ }^{*}, 2^{\prime \prime} \times 1 / 2^{\prime \prime} \times 1 / 2$ "; No-load Speed, 19,000 R.P.M.
Net weight, $2 \frac{1}{2} \mathrm{lbs}$.; overall length, $9^{\prime \prime}$, with end handle $143 / 4^{\prime \prime}$.
Price, standard unit with end cap-(Cat. No. 288) . $\$ 50.00$
Price, with extended end handle-(Cat. No. 289). 53.00

Replacement and Extra Equipment-
No. $203302^{\prime \prime}$ High-speed bonded Grinding Wheel...................................... 81.25
No. $203532^{\prime \prime}$ Wheel Guard............................................................................. 2.25
No. 21757 Wheel Arbor................................................................................. 1.50

No. 21755 1/4" S. A. Chuck with $1 / 8{ }^{\prime \prime}$ Reducing Sleeve................................. 4.50
No. $219551 / 8^{\prime \prime}$ Reducing Sleeve Only, for No. 21755 Chuck...................... 1.00
No. 20846 Tool Post Holder.......................................................................... 6.50


Maximum Wheel Size ${ }^{*}, 21 / 2^{\prime \prime} \times 1 / 2^{\prime \prime} \times 1 / 2^{\prime \prime}$; No-load Speed, 17,500 R.P.M. Net weight, 4 lbs .; overall length, $12 \frac{1}{4}$ ", with end handle $16 \frac{1}{8 \prime \prime}$.
Price, standard unit with Bonnet Cap, Switch in Cap-(Cat. No. 291),
specify voltage......................................................................................... $\$ 55.00$
Price, with Extended switch handle-(Cat. No. 290), specify voltage.... 58.00

## REPLACEMENT AND EXTRA EQUIPMENT

No. $2032921 /{ }^{\prime \prime}$ " High Speed Bonded Grinding Wheel...................................... $\$ 1.35$
No. 26537 21/2" Wheel Guard......................................................................... 2.75
No. 26361 Outer Wheel Washer...................................................................... 1.00
No 26362 Inner Whel .00

No. 20285 Double End Wrench ( ${ }^{1}{ }_{6}{ }^{\prime \prime}$ and ${ }^{11} 1_{16}{ }^{\prime \prime}$ )............................................. . 25
No. 26533 1/4" S. A. Chuck with 1/8" Reducing Sleeve................................. 4.50
No. 21955 1/8" Reducing Sleeve only for No. 26533 Chuck......................... 1.00
No. 26530 Tool Post Holder............................................................................. 6.50

## $3^{\prime \prime}$ DIE GRINDER



Maximum Wheel Size ${ }^{*}, 3^{\prime \prime} \times 1 / 2^{\prime \prime} \times 3 / 8^{\prime \prime} ;$ No-load Speed, 16,000 R.P.M. Net weight, 7 lbs .; overall length, $173 / 4 \mathrm{~m}$; shipping weight $11 \frac{1}{4} \mathrm{lbs}$.
Price, with extended end handle-(Cat. No. 499), specify voltage........ $\$ 60.00$
*No wheels are supplied as standard equipment with Die Grinders. Wheel Guards, Wheel Arbors and maximum size Grinding Wheels can be furnished at extra cost. Ask your jobber about variety of mounted wheels and burrs for use with these units.

## 3" PORTABLE GRINDER



Wheel Size, $3^{\prime \prime} \times 1 / 2^{\prime \prime} \times 3 / 8^{\prime \prime}$; No-load speed, 16.000 R.P.M.
Net weight, 8 lbs ; overall length, $163 / 4^{\prime \prime}$.
Price, complete, specify voltage-(Cat. No. 395).
$\$ 60.00$
Standard Voltage (above units); 110 or 220. On special order 125 or 240 volts.

## REPLACEMENT AND EXTRA EQUIPMENT FOR $3^{\prime \prime}$ DIE GRINDER AND $3^{\prime \prime}$ PORTABLE GRINDER

No. $243173^{\prime \prime}$ High Speed Bonded Grinding Wheel. \$1.60
No. $314573^{\prime \prime}$ Wheel Guard Assembly, complete................................................................ 3.00
No. 31456 Clamp Nut. . 75
No. 20285 Double End Wrench (9/6" $\times{ }^{11} / 16^{17}$ )............................................... . 25
No. $241871 / 4^{\prime \prime}$ S. A. Chuck with $1 / 8^{\prime \prime}$ Reducing Sleeve.. 4.50

No. 21955 1/8" Reducing Sleeve only for No. 24187 Chuck. 1.00

## HEAVY-DUTY PORTABLE GRINDERS

Complete line with most advanced features. Splined gear mountings, steel inserts for bearings, welded steel wheel guards; dust-sealed commutators and switches; ball-bearings set at spindle ends absorb side thrust; shaped grips and switch handles improve control. All grinders furnished with correct size grinding wheel.

## 4" PORTABLE GRINDER



Wheel Size, $4^{\prime \prime} \times 3 / 4{ }^{\prime \prime} \times 1 / 2$ " ; No-load Speed, 5250 R.P.M. .
Net weight, $131 / 4 \mathrm{lbs}$.; overall length, $201 / 2^{\prime \prime}$; shipping weight 18 lbs .
Price, complete, specify voltage-(Cat. No. 59).
$\$ 70.00$

## 5" PORTABLE GRINDER



Wheel Size, $5^{\prime \prime} \times 3 / 4^{\prime \prime} \times 1 / 2{ }^{\prime \prime}$; No-load Speed, 4500 R.P.M.
Net weight, $15 \frac{1}{2}$ lbs.; overall length, $231 / 8^{\prime \prime}$; shipping weight, 21 lbs .
Price, complete, specify voltage-(Cat. No. 60).
$\$ 80.00$

## 6" PORTABLE GRINDER



Wheel Size, $6^{\prime \prime} \times 1^{\prime \prime} \times 5 / 8^{\prime \prime}$; No-load Speed, 3800 R.P.M.
Net weight, 20 lbs .; overall length, $25^{\prime \prime}$; shipping weight, 26 lbs.
Price, complete, specify voltage-(Cat. No. 61)
Standard Voltage-110 or 220 . On special order 125 or 240 volts.

Standard Equipment-For $4^{\prime \prime}, 5^{\prime \prime}$ and $6^{\prime \prime}$ Grinders-3-conductor cable and plug (3rd wire for grounding); dust-sealed plunger switch; grip end handle; adjustable steel wheel guard and one grinding wheel.
Standard Voltage-110 or 220 . On special order 125 or 240 volts. Wheel Rotation-Counter-clockwise, facing wheel-end.

## GLUE POTS



Especially designed for continuous use where maintenance of constant working temperature is important. Thermostatic control brings the temperature of the glue up to $150^{\circ}$ Fahrenheit rapidly, and maintains it at that temperature without variation of more than $5^{\circ}$. Nichrome heating element hermetically sealed and protected against moisture and foreign substance. Ideal for use with book binderies, printing plants, furniture and cabinet factories, toy factories, piano factories, etc. Capacity of glue container-2 quarts.
Weight: Net....................
141/2 lbs. Shipping................................... 16 lbs. Price, complete, specify Alternating Current voltage-(Cat. No. 89)....................... $\$ 25.00$ Price, complete, specify Direct Current voltage-(Cat. No. 487).......... 26.50 Supplied for 110 or 220 volts.

## ©゚ ELECTIRIC TODL HEADQUABTEIBS*

## WHIRLWIND WIRE WHEEL BRUSHES



WHIRLWIND wire wheel brushes give you more brush for your money. More wire per section-closely pack ed-secure life anchored futy work. More qual duty work. More qual-ity-highest grades of wire-carefuly selected and tested. More variety of sizes and types sections-three wire sizes-six diametersinterchangeable arbor hole adaptors-fit any arbor or spindle.

014" WIRE DIAMETER SIZE

| Brush Diam. | No. of SECTS. | Brush Width |  | Arbor ADAPTOR* | Catalog Number | Price Each* |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Hub | Face |  |  |  |
| 4" | $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & \hline \end{aligned}$ | $\begin{aligned} & 7 / 11^{\prime \prime} \\ & { }^{11 / 16^{\prime \prime}} \end{aligned}$ | $\begin{array}{r} 5 / /^{\prime \prime \prime} \\ 7 / 8^{\prime \prime \prime} \\ 11 / 8^{\prime \prime} \\ \hline \end{array}$ | $1 / 2^{\prime \prime}$ | $\begin{aligned} & 23200 \\ & 23201 \\ & 21397 \end{aligned}$ | $\begin{array}{r} 81.00 \\ 1.20 \\ 1.55 \end{array}$ |
| $6^{\prime \prime}$ | $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & \hline \end{aligned}$ | $\begin{aligned} & 7 / 11^{\prime \prime \prime} \\ & { }^{11}{ }^{1 / 16} \end{aligned}$ | $\begin{aligned} & 1^{33^{\prime \prime \prime}} \\ & 13 / 8^{\prime \prime} \\ & \hline \end{aligned}$ | 1/2" | $\begin{aligned} & 232202 \\ & 23203 \\ & 21401 \end{aligned}$ | $\begin{aligned} & 1.20 \\ & 1.65 \\ & 2.20 \\ & \hline \end{aligned}$ |
| 7" | $\begin{array}{r} 1 \\ 2 \\ 3 \\ \hline \end{array}$ | $\begin{aligned} & 7 / 10{ }^{n} \\ & 11 / 16^{\prime \prime} \\ & 1^{11} \\ & \hline \end{aligned}$ | $\begin{aligned} & 1^{3 / 4^{\prime \prime}} \\ & 13 / 8^{\prime \prime} \\ & 1 \end{aligned}$ | 5/8" | $\begin{aligned} & 23204 \\ & 23205 \\ & 21411 \\ & \hline \end{aligned}$ | $\begin{aligned} & 1.65 \\ & 2.30 \\ & 3.10 \\ & \hline \end{aligned}$ |
| $8^{\prime \prime}$ | $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & \hline \end{aligned}$ | $\begin{aligned} & 7 / 1{ }^{n} \\ & 111 / 16^{\prime \prime} \\ & 1^{\prime \prime} \end{aligned}$ | $\begin{aligned} & 7 /{ }^{\prime \prime \prime} \\ & 11 / 8 \\ & 11 / 8^{\prime \prime \prime} \\ & \hline \end{aligned}$ | 5/8" | $\begin{aligned} & 23206 \\ & 23207 \\ & 21405 \\ & \hline \end{aligned}$ | $\begin{aligned} & 1.70 \\ & 2.65 \\ & 3.55 \\ & \hline \end{aligned}$ |
| 10" | 4 | 15/6" | $17 / 8^{\prime \prime}$ | $3 / 4{ }^{\prime \prime}$ | 21407 | 5.95 |
| 12" | 4 | $13 / 8{ }^{\prime \prime}$ | 23/4" | 11/4" | 21409 | 7.30 |

.0118" WIRE DIAMETER SIZE

| $4^{\prime \prime}$ | 1 2 3 | $\begin{aligned} & 7 / 10{ }^{\prime \prime} \\ & 1^{11166^{\prime \prime}} \end{aligned}$ | $\begin{array}{r} 5 / 8^{\prime \prime \prime} \\ 7 / 8^{\prime \prime \prime} \\ 11 / 8^{\prime \prime} \end{array}$ | 1/2" | 27000 <br> 27001 <br> 27002 | $\begin{array}{r} 1.00 \\ 1.20 \\ 1.55 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $6^{\prime \prime}$ | $\begin{aligned} & 2 \\ & 3 \end{aligned}$ | $\begin{aligned} & 7 / 10^{\prime \prime \prime} \\ & 1_{1106}^{11 / 16^{\prime \prime}} \end{aligned}$ | $\begin{aligned} & 1^{3 / 4^{\prime \prime}} \\ & 1^{13 / 8^{\prime \prime}} \end{aligned}$ | $1 / 2{ }^{\prime \prime}$ | $\begin{aligned} & 27003 \\ & 27004 \\ & 27005 \end{aligned}$ | $\begin{aligned} & 1.20 \\ & 1.65 \\ & 2.20 \end{aligned}$ |
| $8{ }^{\prime \prime}$ | ${ }_{3}^{2}$ |  | $\begin{aligned} & 7 /{ }^{\prime \prime \prime \prime \prime \prime} \\ & 118^{\prime \prime \prime} \\ & 11 / \mathbf{N}^{\prime \prime} \end{aligned}$ | 5/8" | $\begin{aligned} & 27009 \\ & 27010 \\ & 27011 \end{aligned}$ | 1.70 2.65 3.55 |
| 10" | 4 | $1^{3} / 16^{\prime \prime}$ | 17/8" | $3 / 4$ " | 27012 | 5.95 |
| 12" | 4 | 13/8" | 23/4" | 11/4" | 27013 | 7.30 |

. 005 " WIRE DIAMETER SIZE

| $4^{\prime \prime}$ | $\begin{aligned} & 1 \\ & 2 \\ & 3 \end{aligned}$ | $\begin{aligned} & 7 / 1{ }^{7 \prime \prime} \\ & { }^{116 / 110} \\ & 1^{11} \end{aligned}$ | $\begin{array}{r} 5 / /^{\prime \prime \prime} \\ 78^{\prime \prime \prime} \\ 11 / 8^{\prime \prime \prime} \\ \hline \end{array}$ | $1 / 2^{\prime \prime}$ | $\begin{aligned} & \mathbf{2} 23208 \\ & 23209 \\ & 23210 \\ & \hline \end{aligned}$ | $\begin{aligned} & 1.45 \\ & 1.95 \\ & 2.70 \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6" | 1 <br> 2 <br> 3 |  | $\begin{aligned} & 1^{3 / 4^{\prime \prime}} \\ & 13 / 8^{11} \\ & 1 \end{aligned}$ | $1 / 2^{\prime \prime}$ | $\begin{aligned} & 23211 \\ & 23212 \\ & 23213 \end{aligned}$ | $\begin{aligned} & \hline \mathbf{2 . 1 0} \\ & 3.50 \\ & 5.15 \\ & \hline \end{aligned}$ |
| $8{ }^{\prime \prime}$ | 1 2 3 |  | $\begin{aligned} & 7 / /^{\prime \prime \prime} \\ & 118^{\prime \prime} \\ & 11 / 2^{\prime \prime} \end{aligned}$ | 8/8" | $\begin{aligned} & 23217 \\ & 23218 \\ & 23219 \end{aligned}$ | $\begin{aligned} & 2.65 \\ & 4.30 \\ & \mathbf{6 . 1 0} \end{aligned}$ |

${ }^{*}$ Price includes one set of Arbor Hole Adaptors. The size Adaptor normally furnished is indicated above, but any other size from $3 / 8^{\prime \prime}$ to $13 / 4$ " can be substituted, if specified in ordering.

## GRINDING WHEELS



## VACKAR-Electric Vacuum Cleaner No. 95 VACKAR

A super-powered cleaner for both automotive and industrial use. With both inlet and outlet hose connections, it can be used as a vacuum cleaner or a blower. The No. 95 Vackar makes an ideal allpurpose cleaner for heavy-duty service in garages, super-service stations, and wash-racks.

Its dual service as cleaner and blower also adapts it to all types of industrial cleaning. It is self-contained, rolls easily over rough floors on ball-bearing swivel casters and its 15 -foot flexible hose easily reaches out-of-the-way corners.


Dimensions: Height, $28^{\prime \prime}$; Diameter of top, $16 \frac{1}{4}{ }^{\prime \prime}$; Diameter of Base, $181 / 2^{\prime \prime}$. Sealed vacuum pull, $65^{\prime \prime}$; Vacuum with $1^{\prime \prime}$ orifice, $18^{\prime \prime}$.
Net weight, 52 lbs .; Shipping weight, 67 lbs .
Price, complete, specify voltage-(Cat. No. 95)
Available for 110 or 220 volts. On special order 125 or 240 volts. Universal Motor.

## No. 95 VACKAR REPLACEMENT ATTACHMENTS

## No. 33058 15-foot Flexible Hose, Extra Flexible

No. 23891 Wide Upholstery Nozzle
No. 23903 Flat Tube Nozzle......................................................................... . 50
No. 18186 61/2" Upholstery Brush................................................................. 1.15
No. 23676 Set of 3 Ball-Bearing Casters..................................................... 4.25

## INDUSTRIAL ATTACHMENTS FOR VACKAR

To expand the use of the Vackar to industrial cleaning, a special group of attachments is listed below. The various nozzles fit the long rigid operator's handle, which is in two parts. This handle requires the Coupling Adaptor to fit the hose of the No. 95 Vackar. The Blower Tool also uses the Coupling Adaptor to fit the No. 95 Vackar hose.


No. 23902 15-foot Flexible Hose, Semi-Rigid............................................... $\$ 14.00$
No. 24834 Operator's Handle-Straight Section* (A)................................. 4.60
No. 24835 Operator's Handle-Curved Section (B)................................... 4.60
No. 26081 Soft Rubber Blower Tool * (C)................................................... 2.10
No. 24836 Coupling Adaptor for No. 95 Vackar (D)................................. 1.30
No. 24833 14" Floor Nozzle** (F)............................................................................. 9.3
No. 26084 14" Felt Floor Tool** (G)............................................................ 14.50
No. 26086 Replacement Felt Strip for No. 26084 (Set of 2)...................... 1.90
No. 26083 10" Floor Brush Tool** (H)....................................................... 14.50
No. 26600 Replacement Nozzle for No. 26083............................................ 8.00
No. 26518 Replacement Brush for No. 26083............................................. 6.50
No. $260851^{\prime \prime}$ Squeegee Nozzle** (J).......................................................... 15.25
No. 26087 Replacement Wide Rubber Strip for No. 26085 (Set of 2) $\dagger$
No. 26088 Replacement Narrow Rubber Strip for No. 26085 (Set of 2) $\dagger \quad 2.55$
No. 25913 Extension Coupling (Joins 2 Hose Sections).
1.40
$\dagger$ Price includes Set of No. 26087 and Set of No. 26088.
*Use with Adaptor No. 24836 for No. 95 Vackar.
**Fit on end of Operator's Handle-Nos. 24834-24835.

## "ELECTIBIC TODL IHEADQUARTEIBS"

## ELECTRIC VALVE SHOP

A complete valve recon-
 ditioning "shop" on wheels. Smart display of precision equipment helps sell reconditioning jobs; sturdy metal cabinet carries all tools necessary for complete, accurate job right at the car. Roomy cabinet top holds Super-Service Refacer and Vibro-Centric Dressing Stand; large drawer has definite space for each item of Vibro-Centric equipment, including Pilots, Stones and Sleeves, plus carbon cleaning brushes, valve guide cleaners and room for other hand tools; lower storage section for VibroCentric Driver and other items such as gaskets, drills, etc.
Cabinet Dimensions: Height, $35^{\prime \prime}$; width, $35^{\prime \prime}$; depth, $20^{\prime \prime}$. Shipping weights: Valve Shop, 322 lbs.; Cabinet only, 130 lbs.

## STANDARD ELECTRIC VALVE SHOP

1 Valve Shop Cabinet.
1 Super-Service Refacer (Wet-Grinding or Standard).
1 Leatherette Refacer Cover
1 Standard Driving Unit (Straight or $55^{\circ}$ ).
3 Valve Guide Cleaners: 21441 ( $5 / 16^{\prime \prime}$ ); 21445 ( $3 / \mathrm{s}^{\prime \prime}$ ); 21449 ( $7 / 16^{\prime \prime}$ ).
2 Carbon Cleaning Brushes: 21416 (Heavy Duty); 21417 (Side Flare).
1 Standard Stone Dressing Stand-No. 20153.
2 Standard Stone Sleeves-No. 22100.
5 Self-Centering Pilots
Hard Seat Stones
6 Soft Seat Stones
2 Finishing Stones
Standard Voltage-110 or 220. On special order 125 or 240 volts.
Price, Standard Valve Shop, complete, specify voltage -with No. 115 Standard Straight Driver and-
9/1" ${ }^{\prime \prime}$ Standard Refacer-(Cat. No. 509)........ $\$ 426.00$
11/16" Standard Refacer-(Cat. No. 510).......
436.00

9/6" Wet-Grinding Refacer-(Cat. No. 514) 441.00
"1/6" Wet-Grinding Refacer-(Cat. No 515) 451.00
-with No. 440 Standard $55^{\circ}$ Driver and-
9/16" Standard Refacer-(Cat. No. 465)
$11 / 16^{\prime \prime}$ Standard Refacer-(Cat. No. 466).
432.00
${ }^{16}{ }^{16}$ Wet-Grinding Refacer-(Cat. No. 463)
447.00
457.00

## HEAVY-DUTY ELECTRIC VALVE SHOP

## 1 Valve Shop Cabinet.

1 Super-Service Refacer (Wet-Grinding or Standard).
3 Valve Guide Cleaners: 21441 ( $5 / 66^{\prime \prime} ;$ ) 21445 ( $3 / 8^{\prime \prime}$ ); 21449 (7/6").
2 Carbon Cleaning Brushes: 21416 (Heavy-Duty); 21417 (Side Flare)
Contents of Heavy-Duty Universal Vibro-Centric Kit; including Heavy-Duty Driving Unit, Standard Dressing Stand, 2 Standard Stone Sleeves, 5 Self-Centering Pilots; 8 Hard Seat Stones, 7 Soft Seat Stones, Pilot Turning Wrench.

Standard Voltage-110 or 220. On special order 125 or 240 volts.
Prices, Heavy-Duty Electric Valve Shop, complete, specify voltage-with-

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Dry Refacer Weight: Net, 143 lbs.; shipping, 163 lbs.
Wet Refacer Weight: Net, 146 lbs.; shipping, 174 lbs.
Precision Valve Grinders combining speed of operation, smooth finish and absolute accuracy in the reconditioned valve face. Two independent universal motors give abundant power and in addition - a third independent motor for driving pump on WetGrinding Refacer only; feed screws give lever-feed speed with screw-feed accuracy; 3-point bearing on feed tables gives smooth action; "twin-grip" collet insures accurate alignment of valve face and stem; ball bearing wheel spindle, doubleended to provide for valve stem and rocker arm grinding; universal work head, adaptable to all popular valve angles and stem sizes.

The Super-Service Valve Refacer can be bought in any of four combinations-in either 9 /16" ( $9 / 32^{\prime \prime}-9 / 16 "$ stem sizes) or ${ }^{11} / 16^{\prime \prime}$ ( $9 / 32^{\prime \prime}$ $11 / 16^{\prime \prime}$ stem sizes) and as a Wet-Grinding or Dry-Grinding Refacer. In all models the collet head is adjustable to grind angles from $30^{\circ}$ to $90^{\circ}$, and the unit is completely equipped with Universal motors, a $4^{\prime \prime}$ grinding wheel and wheel dresser, 3 -wire cable and plug; and valve stem collet.
Cat. 106-9/1" Dry-Grinding Super-Service Refacer.. $\$ 235.00$
Cat. 107-11/6" Dry-Grinding Super-Service Refacer.- 24500
Cat. 281-9/16" Wet-Grinding Super-Service Refacer.. 250.00
Cat. 282-11/16" Wet-Grinding Super-Service Refacer.. 260.00
Standard Voltage- 110 or 220 . On special order 125 or 240 volts.
MICROMETER VALVE STEM GRINDING ATTACHMENT


A new "universal" stem grinding attachment for obtaining exact tappet clearance on all Ford valves and other valves not having tappet adjustments. The same attachment will also grind and true Ford and other tappets. The accuracy and simplicity of this attachment will save many hours of guesswork. Fits all Super-Service (Standard or Wet Grinding) Refacer and operates on the outer end of the wheel spindle; does not interfere with the refacing set-up.

# "OELECTIRIC TDOL IMEAIDQUARTEIBS" 

## NO. 6 UNIVERSAL VALVE \& TOOL GRINDER

An unequalled combination of engineering and operating features makes this new Heavy-Duty Production Grinder the outstanding leader in valve reconditioning performance. A wide variety of valve sizes can be refaced on a highspeed production basis and also the flexibility of the machine permits many tool grinding operations such as the sharpening of cutters and reamers. Attachments for grinding Valve Stems, Tappets and Rocker Arms are standard equipment. All controls and adjustments are designed for foolproof, rapid operation and performance in general is unexcelled in today's markets.

## Standard Voltage:

110V, 1 Ph., 50-60 cycle, Catalog No. 522 ......
$\$ 950.00$
Available on Special Order:
125V, 1 Ph., 50-60 cycle, Catalog No. 522
$\$ 950.00$
$220 \mathrm{~V}, 1$ Ph., $50-60$ cycle, Catalog No. 522.
950.00
$250 \mathrm{~V}, 1$ Ph., $50-60$ cycle, Catalog No. 522.
950.00
$110 \mathrm{~V}, 1$ Ph., 25 cycle, Catalog No. 523 950.00
$115 V$, D.C., Catalog No. 527. 970.00

Give complete characteristics of your current when ordering.

## OUTSTANDING FEATURES:-

1. Range:-Reface valves of any angle from $0^{\circ}$ to $90^{\circ}$ with valve stems from $1 / 4^{\prime \prime}$ to $114^{\prime \prime}$ in diameter. Head diameters up to $\left.5 \frac{1}{4}\right|^{\prime \prime}$ are easily handled.

2 Traverse grind any angle valve from $0^{\circ}$ to $90^{\circ}$. This of course includes flat type valves.
3. Air Chuck grips or releases valve stem instantly-alignment is assured with twin grip collets. Regulated valve reduces air pressure of supply line to the 80 to 90 lbs . required by air chuck.
4. A separate universal motor drives the workhead. Motor speed is quickly adjustable to accommodate large and small sized valve heads.
5. Hypoid gearing drives the workhead spindle for the smoothest grinding finish.
6. Work table is mounted on slide bearings of simple, clean design. After long service an adjustment for wear can be made without any disassembling of the parts.

7 For abundant power the grinding - wheels are driven by a separate $3 / 4$ horsepower constant-speed motor.
8. Closed-type, grease-sealed ball bear8. ings, pre-loaded, with automatic take-up for wear are at each end of the wheel spindle. Assembly is rigidly mounted in a removable "quill" clamped in the wheel saddle.
9. Automatic work-head motor switch. Turns "on" and "off" as work table moves valve toward and away from wheel. Work table travel is limited by an adjustable stop which prevents grinding the valve stem.
10. A drawer-tank of 2 gallon capacity permits large volume wet grinding. A series of baffle plates "settle" grinding sediment. Fluid nozzles have flow control valves and ball-socket joints.
11. Standard equipment includes attachments for grinding Valve Stems, Tappets and Rocker Arms.
12. Tool Grinding: The flexibility and adjustments possible on this machine suit it for many production jobs and machine shop tool grinding operations.


Overall Height-50" Overall Width-50" Cabinet-291/4" $\times 24^{\prime \prime} \times 16^{\prime \prime}$ Grinder Net Wt.-290 lbs.

Cabinet Net Wt.- 160 lbs .
Total Ship. Wt.- 500 lbs. Valve Stem Cap.- $14^{\prime \prime}$ to $11 / 4^{\prime \prime}$ Valve Head Cap.-Up to $51 / 4^{\prime \prime}$

## REPLACEMENT EQUIPMENT AND

 EXTRA GRINDING WHEELS| 29 | V-Belt DC and 60 cycle wheel motor.......... \$ | \$ . 75 |
| :---: | :---: | :---: |
| No. 32588 | V-Belt 25 cycle wheel motor | 1.15 |
| No. 32860 | 1/4" to $\overline{/ 6} 6^{\prime \prime}$ Collet for short valve stems | 8.00 |
| No. 18325 | 9/2" to 9/1" Collet | 8.00 |
| No. 15200 | $1 / 2{ }^{\prime \prime}$ to "11/6" Collet | 10. |
| No. 31513 | 9 96" to 7/8" Collet | 12. |
| No. 31514 | $7 / 8^{\prime \prime}$ to 11/4" Collet. | 12. |
| No. 32944 | $6^{\prime \prime} \times 3 / 4^{\prime \prime} \times 2^{\prime \prime}-60 \mathrm{~N}$ Recessed Grinding Wheel (Standard Equipment).................. | 3.25 |
| No. 31429 | $6^{\prime \prime} \times 3 / 4^{\prime \prime} \times 2^{\prime \prime}-46 \mathrm{~N}$ Recessed Grinding | 3.2 |
| No. 32822 | $6^{\prime \prime} \times 3 / 4^{\prime \prime} \times 2^{\prime \prime}-80 \mathrm{~N}$ Recessed Grinding Wheel |  |
| No. 20939 | $4^{\prime \prime}$ Recessed Grinding Wheell for Valve Stems and Rocker Arms (Standard Equipment).. | 2.40 |

## ACCESSORIES \& REPLACEMENTS FOR SUPER-SERVICE VALVE REFACERS

No. 24247 Wet Grinding Attachment, complete
Can be used with Micrometer Valve Stem Grinding Attachment or Rocker Arm Grinding Attachment on Wet Grinding Super-Service Refacers only.
No. 20949 Rocker Arm Grinding Attachment.
Operates on outer end of Super-Service Refacer Wheel Spindle. Consists of a Micrometer Feed mounted on a machine bar. A bracket holds the diamond point for dressing the $4^{\prime \prime}$ recessed wheel. An adjustable arm is pivoted and slotted to permit the grinding of various sized Rocker Arms. A double cone clamp holds the Rocker Arm and is adjustable for various sized bores. A Grinding Wheel is not included with the attachment. Use No. $209394^{\prime \prime}$ recessed Grinding Wheel.
No. $1989815^{\circ}$ and $90^{\circ}$ Dressing Attachment $\qquad$ 10.50 Includes No. 19897 special Grinding Wheel for $15^{\circ}$ and $90^{\circ}$ valves.
No. 19897 Special Wheel only for $15^{\circ}$ and $90^{\circ}$ valves.

No. 31471 Standard $4^{\prime \prime}$ Wheel for hard valves...............................................\$ 3.00
No. $209394^{\prime \prime}$ Recessed Wheel for Micrometer Attachment and Rocker Arm Grinding Attachment. ..... 2.40
No. 33056 Special $4^{\prime \prime}$ Wheel for Stellite and Fine finishes. ..... 3.00
No. 15200 Standard Collet ( $1 / 2^{\prime \prime}-11,6_{6}{ }^{\prime \prime}$ cap.)8.00No. 26060 Special Collet for short valve stems ( $1 / 4^{\prime \prime}-7,16^{n \prime}$ cap.).10.00
No. 17745 Special Collet for short valve stems ( $1 / 2^{\prime \prime}-11 / 16^{\prime \prime}$ cap.) ..... 0.00
No. 20934 Wheel Dresser and V-block without Diamond. ..... 2.25
No. 5574 Diamond and Nib for all Wheel Dressers. ..... 3.50
No. 32742 Cutter-type Dressing Attachment ..... 3.75
No. 16286 V-Belt for Work (Collet) Spindles. ..... 65
No. 23617 V-Belt for Wheel Motor ..... 65
No. 20380 8-oz. Container Grinding Wheel Coolant. ..... 35
No. 229.46 Pint Container Grinding Wheel Coolant. ..... 60
No. 22947 Quart Container Grinding Wheel Coolant. ..... 95
No. 22173 Adjustable Lamp, complete with Socket, Switch, etc. ..... 6.50
No. 32121 Leatherette Refacer Cover. ..... 3.50

Black\& Deaker Slarvice


To assure you prompt, efficient service on Black \& Decker Products, we operate 28 Factory Service Branches at strategic points throughout the United States and Canada. These Service Branches are manned by Factory-trained personnel and equipped with genuine Black \& Decker service and replacement parts. When you need "factory service," you will find a Black \& Decker Factory Service Branch within 24 hours of you, ready to serve you as expertly, as reasonably and as promptly as at Towson.

## FACTORY SALES and SERVICE BRANCHES



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429 WESTLAKE AVENUE, N. .2822 LOCUST STREET

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4 Bridge Road, Glebe, Sydney, Australia
BLACK \& DECKER, INC.
Rua Oriente 768, Sao Paulo, Brazil

THE BLACK \& DECKER MFG. CO.
"ELECTRIC TOOL HEADQUARTERS"
Form No. 10
TOWSON 4, MARYLAND, U. S.A.


[^0]:    9/16" Standard Refacer-(Cat. No. 341)
    $\$ 456.00$
    11/16" Standard Refacer-(Cat. No. 342)
    466.00

    9/16" Wet-Grinding Refacer-(Cat. No. 339) 471.00

    11/16" Wet-Grinding Refacer-(Cat. No. 340) 481.00

    Price, Valve Shop Cabinet only-(Cat. No. 31363)
    85.00

